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TONE UP FOR THE HOLIDAYS

We always bring you the best cutting-edge, scientifically backed research on blasting fat, toning up, getting healthy and achieving your best shape. But when the holiday season comes around, we like to take things up a notch here at FitnessRx. After all, it's the season of sweet treats and missed workouts due to busy schedules. And while there is nothing wrong with enjoying the holidays and allowing yourself to indulge a little (you've earned it!), this also means it's important to keep training hard and make fitness a priority more than ever.

Whether you are a seasoned fitness fanatic or just ready to take your training to a new level, our cover model IFBB Pro Jessie Hilgenberg can help! In "Strong, Shapely Legs With IFBB Pro Jessie Hilgenberg: Advanced Lifts To Sculpt Your Lower Body" by Jaime Baird on page 46, Jessie shares a killer lower body program to help you achieve the shapely, carved out quads, hamstrings and glutes you desire. This is a difficult program that brings the intensity and will make you work— but you won't regret it because it will produce results. Check out Jessie's program, tips, advice and meal plan, and get ready to sculpt an incredible lower body.

Plyometric exercises work because they are explosive moves that get your heart pumping and blast fat fast. Since we know you are busy this holiday season, we decided to show you some advanced plyometric moves that can help you get more done in less time. In "Plyometric Progressions with three-time Ms. Bikini Olympia Ashley Kaltwasser" by Lisa Steuer on page 74, you can increase the intensity with this powerful program. Many of these moves may be completely new to you, or may just slightly vary from common plyometric exercises you are already doing. This program can be used as a switch-up from your normal routine in order to facilitate results, tone up and blast fat fast this holiday season.

Of course, sexy curves are a must-have asset any time of the year, but it's an especially great look to achieve during the holiday season. After all, nothing looks better with fitted sweaters and holiday dresses than a strong, shapely body. In "Hourglass Workout with IFBB Bikini Pro Courtney King: Create Sexy Curves By Adding Shape to the Shoulders, Legs and Butt" by Lisa Steuer on page 56, this effective total body workout will tighten up your glutes, add shape to the shoulders and sculpt sexy legs— helping you to achieve the full package. In addition, this hourglass workout will also save you time by utilizing the most effective exercises for total body toning.

The holiday season can wreak havoc on our backsides between the long car rides, cross-country flights, sitting around the dinner table and missed gym sessions. But you can combat this by making butt-shaping a priority this holiday season. In "Bands & Bodyweight Booty Workout With IFBB Bikini Pro Stephanie Mahoe: Build Your Backside Anywhere, Anytime" by Jaime Baird on page 66, Stephanie shares two effective workouts using just your bodyweight and bands. Stephanie has transformed what she refers to as her "pancake butt" into a shapely, tight pro bikini booty, so she has lots to share to help our cause!

If you need some diet advice this holiday season, then be sure to check out "The Holiday Diet Alternate Day Fasting: Eat All You Want and Lose Weight" by Shoshana Pritzker, RD, CDN on page 90, which includes a tasty and easy-to-follow meal plan. Intermittent fasting has been shown in studies to have weight-loss benefits— and it may be just what you need to stay on track during the holidays.

As usual, the rest of the issue is packed with the most cutting-edge tips, workouts and advice from the experts as well as scientifically backed research on exercise and healthy eating to help you achieve your best body ever this holiday season. From all of us at FitnessRx, have a great holiday season! See you in 2016!

Elyse & Jennifer

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* Selected references (1-11) are available at snac.com

FitRx MAIL Room

LETTER OF THE MONTH

BACK TO BACK WITH NICOLE WILKINS

I absolutely adore Nicole Wilkins and her secrets to living "The Fit Life!" When I saw her feature inside FitnessRx for Women, I was so hyped ["Back to Back with Figure Olympia Champion Nicole Wilkins," October 2015]! I truly feel like all women can relate to Nicole the best when it comes to learning about how to eat healthy and how to stay in shape. This article gives you a step-by-step guide on how to train just like the champ, which really goes to show that there are no limits with FitnessRx. Thank you for helping me to learn something new with every issue!

Kristina Bowers
Email

FLAT ABS WORKOUT AND DIET

If there is one thing that I absolutely love about FitnessRx for Women, it's the consistency with every issue. You guys never disappoint! I've always been a huge fan of Justine Munro, and with the feature in the recent issue on how to get flat abs and maintain those abs with a nutritious diet— I was blown away ["Flats Abs Belly Burn Workout and Diet with IFBB Pro Justine Munro," October 2015]! Not only is the workout so detailed, but also the diet plan is perfection! I now know what to eat every single day, and know that I can spice up my meals without just sticking to chicken and fish every other day. Thank you, FitnessRx!

Leslie Black
Email

SCULPTED AND STRONG

Candice Lewis knows her stuff when it comes to sculpting and creating strong arms. Her workout is flawless, especially in the "Get Sculpted and Strong" feature in this month's issue [October 2015]. I also love how in her interview she talks about training and achieving her goals. Her responses are truly genuine, and it really fuels my motivation to know that a fitness athlete like Candice Lewis has struggled with fitness challenges like healthy eating. It gives me hope that I can become successful, too!

Jennifer Wade
Email

THANK YOU FOR ALL YOU DO!

Thank you so much for each article, each post, each magazine that you put out. I competed in my first show last November (placed 3rd in Bikini Open C), and while I had a great trainer, I decided to look for someone who fit my style better. In the few months that it took to find that new trainer, your content is what I turned to time and time again in order to get new and fresh ideas for my workouts and diet. Whether it was building up my glutes and hams or working on flat abs— I knew your advice would help me achieve my goals. I placed second in Bikini Open C in my last show just recently, and trust me when I say you guys had a part in that. It's also worth mentioning that your models truly are role models— women I look up to.

Thank you for everything that you do!

Marissa Myatt
Email

GLUTE-SMITH

I'll admit that I never really used the Smith machine much. I honestly thought it could only be used for a few exercises, but the feature with Ashley Kaltwasser really opened my eyes [Become a Glute-Smith," October 2015]. Using the advice and the exercises in the article, I have been using the Smith machine more in order to add some variation to the moves that I am already doing. I really think this is a great way to switch things up and not only that, it helps keep me from getting bored with my exercise routine. Thank you for the awesome ideas!

Lindsay Robinson
Email

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WITH IFBB BIKINI PRO STEPHANIE MAHOE



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Increase Fat Burn and Intensity with these Advanced Circuit Workouts

FEATURING 3X BIKINI CHAMPION ASHLEY KALTWASSER



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Sports Bra by Onzie
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With Pauline Nordin

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DECEMBER 2015

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BEAUTY

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EXERCISING— SOLVED: DNA
TESTING COULD PERSONALIZE
BEAUTY PRODUCTS.

GAUGING EXERCISE INTENSITY

■ Intensity is the most important factor for increasing aerobic fitness. You can assess exercise intensity with target heart rate, rating of perceived exertion (RPE) and the talk test—according to Brad Roy, a clinical exercise physiologist from Kalispell, Montana. **Your target heart rate zone— a range of rates at which you should exercise to experience cardiorespiratory benefits—**

is between 65 percent and 90 percent of your age-predicted maximum heart rate. You can predict maximum heart rate by subtracting age from 220, but this method is often inaccurate. A heart rate monitor will help you exercise at the right heart rate. Rating of perceived exertion involves exercising according to how you feel. The RPE scale ranges from a rating of six

(extremely light) to 20 (maximal exertion). With practice, you will know how you feel when you have exercised intensely enough. The talk test is the easiest and most practical: exercise at the fastest rate at which you can comfortably carry on a conversation. Keeping track of exercise intensity will help you get fit faster. (*ACSM's Health & Fitness Journal*, 19(4): 3, 2015)

EXHAUSTIVE EXERCISE TEMPORARILY SUPPRESSES THE IMMUNE SYSTEM

■ Exhaustive aerobics or weight training temporarily suppresses the immune system in recreational athletes because of physical and oxidative stresses—according to Korean researchers. For aerobic exercise, athletes ran on a treadmill at 85 percent of maximum effort to exhaustion. Weight training involved a circuit with five exercises that the subjects performed until exhausted. Free radicals—highly reactive chemicals produced naturally during metabolism—were higher at the end of exercise and during recovery, compared to rest. This coincided with a decrease in markers of immune system function. Other studies have found that marathon runners are more susceptible to upper respiratory infections for up to 30 days after a race. Athletes must balance the stress of training with adequate recovery to avoid illnesses. Getting a cold or flu can stop athletes in their tracks. (*Journal of Exercise Rehabilitation*, 11:198-203, 2015)

BANDS DO NOT INCREASE MUSCLE ACTIVATION DURING SQUATS

■ Large muscle, multi-joint exercises such as the squat and bench press, using free weights, provide constant resistance during the exercise— but athletes can exert more force toward the end of the range of motion because of an increased mechanical advantage. Many athletes use bands or chains to increase resistance at the end of the range of motion of these lifts. **Researchers from Fjordane University College in Norway found that using elastic bands during the squat did not increase muscle activation compared to a traditional free-weight squat.** They speculated that the elastic bands did not provide enough additional resistance toward the end of the range of motion, and that athletes should have used stronger bands or chains. (*Journal Strength Conditioning Research*, published online September 1, 2015)

STAY
GROUNDED
FOR
WHOLE-
BODY
STRENGTH

■ Exercising on stable ground builds core stability and increases lower and upper body strength at the same time. Decreasing stability of the surface (such as when using Swiss or BOSU balls) or load (as in the unilateral cable chest press) decreases the training load. No study has found that doing isolated core exercises on unstable surfaces improves athletic performance or builds significant strength in the core muscles. A meta-analysis comparing training on stable or unstable surfaces against sedentary controls showed that unstable training builds strength in adolescents, young adults and older adults, but training on stable surfaces was better. The best exercises for building core strength are large, whole-body exercises, such as kettlebell swings and snatches, squats, deadlifts, standing overhead presses and plyometrics. These exercises use heavier loads, shorter tension times and higher speeds. Ground-based exercises have the same force, velocity and core-stabilizing requirements required in most sports and movement skills. (*Sports Medicine*, published online September 10, 2015) »

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HIIT IMPROVES PERFORMANCE and LOWERS BLOOD PRESSURE

■ High-intensity interval training (HIIT) improves fitness more rapidly than traditional aerobics. Many people have trouble sticking to a HIIT program because of its high intensity.

Researchers from the University of Copenhagen in Denmark, led by Jens Bangsbo, found that 10-20-30 training—repeated bouts of 30 seconds of easy exercise, followed by 20 seconds of moderate-intensity exer-

cise, followed by 10 seconds of intense exercise—improved 5K running performance, reduced blood pressure, increased maximal oxygen consumption and reduced vascular endothelial growth factor (a measure of blood vessel disease). Test subjects were able to sustain 10-20-30 training during the eight-week training program

because it only involved 10-second periods of intense exercise rather than longer, intense intervals. (Scandinavian Journal Medicine Science Sports, published online December

Similar Fitness Gains From LONG and SHORT ROWING INTERVALS

■ Roger Bannister broke the four-minute mile in 1954 by running four half-mile runs at maximum speed during his lunch hour while a student in medical school. More recent studies on interval training showed remarkable improvements in fitness using intervals lasting from 30 seconds to four minutes.

Researchers from Ankara University in Turkey found that rowers using intervals of 2.5 minutes gained fitness as well as those practicing 30-second intervals at a higher intensity.

A variety of training intensities are effective for high-intensity interval training (HIIT). (Journal Strength Conditioning Research, 29: 2249-2254, 2015)

DOES ICE SPEED Post-Exercise Healing?

■ The RICE principle—rest, ice, compression and elevation—has been the cornerstone of athletic injury management for the past 40 years. A study by scientists from Taiwan and the opinions of several leading orthopedic specialists have cast doubt on this treatment method. The Taiwanese study induced muscle damage using eccentric muscle contractions of the elbow extensors, and then applied ice for 15 minutes at zero, three, 24, 48 and 72 hours after exercise. Compared to a control group, post-exercise icing caused greater fatigue and soreness. Ice had no effect on immune system function. Before we toss out the baby with the ice water, this was a small study that used an isolated muscle group. Also, there were no differences in strength between the ice and control groups. A built-in bias in the study is the difficulty of finding a true control group for ice. We need more research before we take the “I” out of RICE. (Journal Strength Conditioning Research, 27:1354-1361, 2013)

Weight Training ENHANCES CELL MITOCHONDRIA

■ The mitochondria are the powerhouses of the cell. Loss of mitochondria is associated with poor metabolic health and premature death. Aerobic exercise is the best way to increase the number of mitochondria and their function. Craig Porter from the Shriners Hospitals for Children in Galveston, Texas and co-workers found that weight training also improves mitochondrial function. Eleven young men who trained with weights for 12 weeks showed improvements in important mitochondrial chemicals and in mitochondrial gene activity. These results may be particularly important in older adults. **People lose muscle mass and mitochondrial function as they age.** Including weight training in the exercise program could help preserve muscle mass and enhance mitochondrial capacity. (Medicine Science Sports Exercise, 47: 1922-1931, 2015) ■

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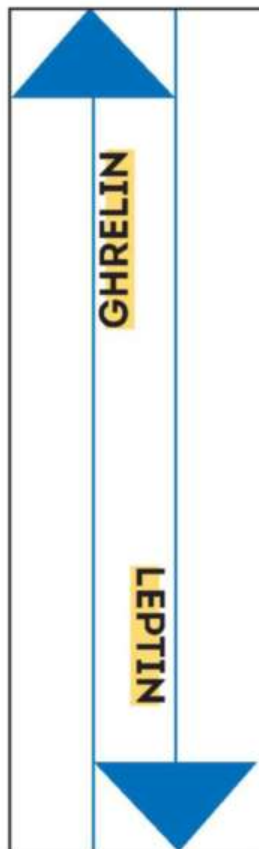
■ Brown fat (brown adipose tissue, BAT) converts food energy directly into heat. White fat does the opposite— it stores energy. Individual differences in BAT content and activity play an important role in human obesity. Increasing brown fat activation helps burn more calories and fat. Patrick Schrauwen and co-workers from Maastricht University Medical Center in the Netherlands found that oral supplements of the bile acid chenodeoxycholic acid increased brown fat activity in adult women. **Bile salts are produced in the liver and have hormone-like effects on metabolism.** Bile acids are currently available in Advanced Molecular Labs' (AML) Thermo Heat— the original brown fat activator. (Cell Metabolism, 22:418-426, 2015)

STRESS DECREASES Dietary Willpower

■ People trying to lose weight have trouble avoiding sweet-tasting foods when they're stressed— according to Swiss researchers from the University of Zürich, led by Todd Hare. They studied 51 young adult men who were actively trying to follow a healthy diet and lifestyle. The research subjects rated the desirability of a series of images of healthy and unhealthy foods. Half the group put their hands in ice cold water for as long as they could tolerate, which increased stress and cortisol levels. Then both groups received brain scans while once again evaluating the foods for desirability. Men under stress chose more sweet-tasting foods. Stress activated immediate reward signaling in the amygdala and striatum of the brain. It is not known whether the physical stress used in this study is comparable to the emotional stress of everyday life. (Neuron, 87:621-631, 2015)



Sleep Deprivation **INCREASES OBESITY RISK**



■ Lack of sleep disrupts energy balance, which determines whether you gain weight, lose weight or stay the same— according to a literature review and meta-analysis conducted by David Allison and colleagues from the University of Alabama at Birmingham. Sleep deprivation increases a hormone called ghrelin, which promotes appetite. It also reduces leptin, a hormone that normally suppresses appetite. **Some studies have found that inadequate sleep increased the risk of obesity by 200 percent.**

Inadequate sleep was also linked to diabetes and high blood pressure. Sleep disturbances are surprisingly common in children and adults and can cause serious health problems, such as memory loss, coronary artery disease, stroke and daytime sleepiness— and contribute to automobile and workplace accidents. See your physician for a sleep study if you have insomnia, snore loudly, stop breathing for 20 seconds or more during sleep or wake frequently at night. (Obesity Reviews, 16: 771-782, 2015)

MELATONIN CUTS FAT and **INCREASES LEAN MASS**

■ Melatonin is a hormone produced by the pineal gland in the brain that promotes sleep and daily biological rhythms. Danish researchers from Aarhus University, led by Anne Amstrup, found that **women consuming 3 to 5 grams of melatonin daily for one year decreased body fat by nearly seven percent and increased lean mass by 5.2 percent,** compared to a placebo treatment (fake melatonin). There were no differences in weight, body mass index or blood sugar regulation between the experimental and control groups. (Clinical Endocrinology, published online September 9, 2015)

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HIGH SALT INTAKE LINKED TO OBESITY

■ High salt intake is linked to obesity through increased consumption of sugar-sweetened drinks. Feng He and colleagues from the London School of Medicine and Dentistry found that high salt intake was also independently related to elevated body fat in children and adults. They assessed sodium levels from 24-hour urine collections in more than 1,000 children and adults gathered as part of the U.K.'s National Diet and Nutrition Survey. Salt intake was highest in obese people. The risk of obesity increased 28 percent for each gram of sodium consumed above average values. (Hypertension, published online August 3, 2015)

Does Skipping Breakfast *Cause* Weight Gain?



Exercise MIGHT ACTIVATE BROWN FAT

■ The human body contains small amounts of a calorie-burning tissue called brown fat (brown adipose tissue, BAT) that converts food energy directly into heat. White fat does the opposite—it stores energy. BAT promotes non-shivering thermogenesis, which generates heat and helps animals and humans adapt to the cold. Exercise might activate BAT—according to researchers from the University of Granada in Spain. BAT is turned on by the sympathetic nervous system, which is the body's fight-or-flight system for coping with exercise, stress and emergencies.

Increasing brown fat activation helps people expend more calories and burn more fat.

Individual differences in BAT content and activity plays an important role in human obesity.

(Annals of Nutrition & Metabolism, 67:21-32, 2015)

■ The U.S. Dietary Guidelines recommend eating breakfast every day to prevent weight gain. It turns out that the recommendation was based on observational studies rather than well-structured experiments. In observational studies, scientists observe subjects and measure variables of interest without assigning them treatments. **A Columbia University study comparing people who ate no breakfast, oatmeal or frosted flakes showed that skipping breakfast triggered weight loss during a four-week study**, while breakfast eaters experienced no change. Eating breakfast has other advantages such as providing fuel for morning activities and increasing total daily fiber intake. (Obesity, published online September 6, 2012; The Washington Post, August 10, 2015)

FAT BURNING GREATEST AFTER AN OVERNIGHT FAST

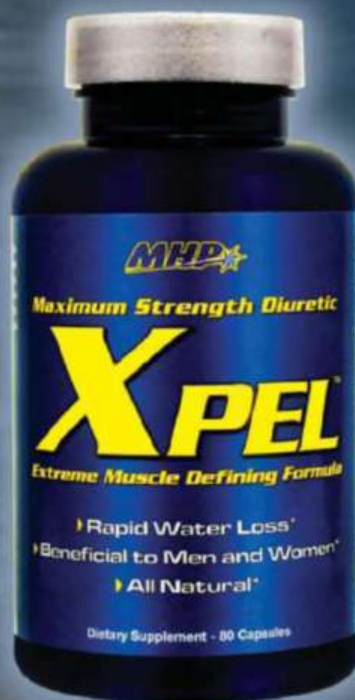
■ Exercising following an overnight fast will burn more fat than exercising after breakfast, according to Korean researchers. Test subjects reported to the laboratory for a 30-minute treadmill run, either fasted or after breakfast. When fasted, blood sugar was lower and free fatty acids, growth hormone and cortisol were higher than when the subjects ate breakfast. Consistently exercising while fasted in the morning should result in greater fat burning and fat loss than exercising after breakfast. (Journal of Physical Therapy Science, 27:1929-1932, 2015) ■

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Do you struggle with shedding those last few pounds to accentuate your perfectly lean physique? All too often, no matter how hard you work out and diet, you just can't seem to lose those last few pounds to highlight your muscle tone and definition. The fact is, most women are storing 5-10 lbs. of excess water, causing them to look soft and bloated. Fortunately, XPEL, the powerful all-natural diuretic, can help you drop water weight fast. It's so effective that within 12 hours, XPEL will begin to shed the excess water weight and reveal your sexy, lean and toned body.

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NYC REQUIRES RESTAURANTS TO FREEZE RAW FISH BEFORE SERVING

■ Popular raw fish dishes such as sashimi, sushi and ceviche carry the risk of parasite infections that can cause gastrointestinal problems, muscle weakness, elevated heart rate and jaundice. **Public health experts recommend that raw fish first be frozen to a temperature below 4 degrees Fahrenheit for at least seven days before serving, to kill parasites.** The New York City Department of Health and Mental Hygiene requires that all raw or undercooked fish must be frozen before serving. The ruling is consistent with new recommendations from the U.S. Food and Drug Administration (FDA) for avoiding infection from contaminated fish. Exempted seafood includes shellfish, farm-raised fish and tuna. (The New York Times, July 10, 2015)

High-Protein Breakfast PREVENTS FAT GAINS IN OVERWEIGHT TEENS

■ Consuming a high-protein breakfast (35 grams) prevented gains in body fat, stabilized blood sugar, reduced caloric intake and decreased hunger sensations, compared to groups that ate normal breakfasts or skipped the meal completely—according to a study led by Heather Leidy from the University of Missouri. **Consuming high-protein breakfasts curbs hunger and helps maintain metabolic rate, which increases the chances for successful weight control.** Obesity has been increasing in children and teens at an alarming rate. Consuming high-protein breakfasts is a simple but effective way of reversing the trend. (International Journal of Obesity, published online June 1, 2015)»



BUTTER INCREASES BLOOD CHOLESTEROL

■ High consumption of saturated fats or polyunsaturated fats does not affect the risk of cardiovascular disease—according to a large meta-analysis led by Rajiv Chowdhury from the University of Cambridge in the U.K. This startling finding contradicted mainstream nutritional advice dating back to the 1950s. You should not use this study as an excuse to pig out on ice cream and butter. Researchers from the University of Copenhagen

in Denmark found that compared to olive oil, butter consumption caused small increases in blood cholesterol and LDL cholesterol (the bad cholesterol), but increased HDL (good cholesterol). People with high levels of blood cholesterol should avoid butter, but people with normal cholesterol levels can safely consume small amounts. (American Journal of Clinical Nutrition, 102:309-315, 2015)



GRAPE JUICE IMPROVES ENDURANCE

■ Consuming grape juice for 28 days improved endurance by 15.3 percent in a small group of recreational runners, compared to a control group that consumed grape-flavored water. The Brazilian study found no differences in aerobic capacity or anaerobic threshold. Grape juice increased total antioxidant capacity and vitamin A but had no effect on C-reactive protein, a measure of inflammation. If the results can be replicated, consuming grape juice might be an effective, healthy way of promoting metabolic health and improving endurance capacity. (Applied Physiology Nutrition Metabolism, 40: 899-906, 2015)

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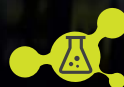
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DIET MAKES A DIFFERENCE IN SPORT

■ Food fuels sport, but athletes get conflicting information about diet, performance and weight loss. Scientists from New Zealand summarized vital nutritional information for athletes. Carbohydrates are the main fuels used during exercise at intensities above 65 percent of maximum effort. Athletes need carbohydrates for high-intensity competitions and practice to maximize glycogen stores and maintain high levels of carbohydrates for fuels. They should stay hydrated and keep fluid losses during exercise to less than two percent of bodyweight. They should also consume adequate amounts of protein to promote tissue recovery and adaptation. Useful supplements include creatine monohydrate, leucine, beetroot (nitrate), citrulline malate, beta-alanine, betaine, potassium and magnesium citrate, ATP and vitamin D. Supplements are largely unregulated, so athletes should take care not to consume products containing banned substances. (Open Access Journal of Sports Medicine, 6: 259-267, 2015)

EATING PROTEIN & VEGETABLES BEFORE CARBS PROMOTES BLOOD SUGAR REGULATION

■ Eating vegetables and protein before carbohydrates resulted in lower post-meal blood sugar levels in overweight people with type 2 diabetes— according to a study led by Louis Aronne from Weill Cornell Medical College in New York City. Preventing spikes in blood sugar in diabetics is important for preventing blood vessel disease that can lead to heart attack. It is also important in athletes. Maintaining stable blood sugar helps prevent major shifts in energy levels and reduces fat deposition. A simple way of preventing blood glucose spikes is to consume your protein shake at the beginning of a meal. This will turn on biochemical pathways that promote muscle protein synthesis and prevent rapid increases in blood sugar. (Diabetes Care, 38: e98-e99, 2015)

GINGER PREVENTS Post-Exercise Muscle Soreness & Inflammation

■ Increasing ginger consumption might promote recovery from intense weight training involving eccentric muscle contractions (lengthening contractions or negatives), and reduce inflammation following intense endurance exercise— according to a literature review by Patrick Wilson from the University of Nebraska, Lincoln. **An analysis of seven studies showed that consuming two grams of ginger per day will help relieve post-exercise muscle soreness and promote recovery.** Ginger has no effect on body composition, metabolic rate, muscle strength or perceived exertion during exercise. It is not clear whether these results apply to long-term use in accomplished athletes. (Journal Strength Conditioning Research, published online July 11, 2015)



MANAGING Carb Intake

■ Nutritionists from around the world issued guidelines for carbohydrate intake at the International Carbohydrate Quality Consortium. People should avoid large spikes in blood sugar by eating more complex carbohydrates, proteins and fats. Complex carbohydrates are digested slowly. The glycemic index, the rate that a food increases blood sugar, is an important and consistent measure of the blood sugar load from a meal. Consuming low-glycemic index meals is particularly important for people with type 2 diabetes and insulin resistance. Consistently consuming these meals will reduce the risk of type 2 diabetes. Low-glycemic index foods are typically higher in fiber, which is important for blood cholesterol regulation, digestion and gastrointestinal health. Consuming low-glycemic index meals is particularly important for sedentary people. Consistently eating more complex carbohydrates may reduce the risk of coronary artery disease, improve blood fats and reduce whole-body inflammation. (Nutrition, Metabolism & Cardiovascular Diseases 25: 795-815, 2015) ■

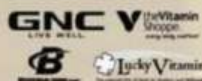
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Some Supplements INEFFECTIVE FOR WEIGHT LOSS

■ Non-stimulant herbal supplements designed to promote weight loss are extremely popular products that claim to increase fat burning, speed metabolic rate and decrease body fat. Amanda Salacinski from Northern Illinois University, and colleagues, found that supplements containing either raspberry ketones or metabolic activator blend had no effect on resting metabolic rate, fat use or carbohydrate use. These supplements do not promote weight loss or increase fat use. (Journal Dietary Supplements, published online August 28, 2015)

MELATONIN IN RED WINE PROTECTS THE HEART

ANTIOXIDANT SUPPLEMENTS HAVE NO EFFECT ON EXERCISE IN THE HEAT OR COLD

■ Cells naturally produce highly reactive chemicals called free radicals that increase during high rates of oxygen consumption that occurs during exercise. Exercising in the heat or cold enhances free radical formation and contributes to fatigue. Researchers from Austria and Thailand found that supplementing the antioxidants alpha-ketoglutarate (AKG) and 5-hydroxymethylfural (5-HMF) prior to exercising in normal, cold or hot temperatures had no effect on exercise performance. Short bouts of exercise in hot or cold environments do not produce significant oxidative stress. Taking antioxidants before exercising in the heat or cold is not beneficial. (International Journal of Physiology Pathophysiology and Pharmacology, 7: 98-104, 2015)

■ Moderate red wine consumption reduces the risk of cardiovascular disease. Scientists have attributed the health benefits of red wine to its high content of the polyphenol resveratrol. A South African study on rats found that melatonin in wine might be a better explanation for the health benefits of red wine. Melatonin is a hormone produced by the pineal gland in the brain that promotes sleep. It is produced cyclically in response to darkness and light. **Melatonin protects the heart from chemicals called free radicals that promote heart stress.**

Supplementing the hormone might be a lifesaver during a heart attack when the heart is not getting enough oxygen. (Biochemical and Biophysical Research Communications, published online August 18, 2015; International Journal of Cardiology, 182:54-55, 2015)

High Vitamin D Intake Might Improve Athletic Performance

■ High intake of vitamin D might increase muscle function, decrease recovery time after exercise, promote strength and power and increase testosterone levels— according to a literature review by researchers from Simon Fraser University in Canada. Vitamin D receptors are located in almost every tissue in the body, and the vitamin is involved in controlling the activities of more than 900 genes. **Doses up to 4,000-5,000 international units per day combined with vitamin K could improve athletic performance.** High doses of vitamin D have negative side effects and increase the risk of premature death. (Journal International Society Sports Nutrition, 12:33, 2015) »

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■ Alanine is an amino acid that helps supply energy during exercise. It is converted to blood sugar in the liver by a process called the glucose-alanine cycle. While it is not used to synthesize muscle tissue or enzymes, it influences exercise capacity—particularly endurance performance. The International Society of Sports Nutrition, in a position statement, concluded that alanine increases muscle carnosine levels and acts as an intracellular buffer. Alanine is a safe supplement with few side effects. It improves exercise performance in exercise lasting one to four minutes. It reduces fatigue in older people, and may be particularly beneficial when consumed with other supplements such as creatine monohydrate. (Journal International Society Sports Nutrition, 12: 30, 2015)

LARGE, WEEKLY DOSES OF OMEGA-3 FATTY ACIDS BEST FOR WHOLE-BODY RETENTION

■ The omega-3 fatty acids EPA and DHA found in fatty fish reduce the risk of heart attack, modestly lower blood pressure, reduce inflammation, decrease the risk of dementia and help treat depression. Giovanni Turchini from Deakin University in Australia and colleagues, in a study on rats, found that administering large doses of omega-3s once a week resulted in greater omega-3 retention than daily supplementation. If these results apply to humans, taking high doses of omega-3 supplements once or twice a week is preferable to consuming them every day. (Nutrients, 7: 5628-5645, 2015)

BEETROOT JUICE IMPROVES PERFORMANCE AND CARDIOVASCULAR FUNCTION

■ Beetroot juice improves endurance capacity, boosts oxygen delivery and reduces the work of the heart during exercise—according to researchers from Korea and the University of California, Davis. College-aged males were fed beetroot juice or nitrate-depleted beetroot juice for 15 days. Beetroot juice doubled blood nitric oxide, a critical chemical for controlling blood flow. **Beetroot juice reduced systolic blood pressure, diastolic blood pressure, mean arterial pressure and total peripheral resistance at rest and during exercise.** It also lowered the load on the heart during exercise, as measured by rate-pressure product (heart rate times systolic blood pressure). Beetroot juice is an important supplement for improving cardiovascular health and enhancing endurance capacity. Other studies have found that a single glass of beetroot juice increased performance in kayaking and cycling. (American Journal of Physiology Regulatory, Integrative and Comparative Physiology, published online June 17, 2015)

SUPPLEMENTING CALCIUM MAY INCREASE THE RISK OF HEART ATTACK AND STROKE

■ Calcium and vitamin D supplements may prevent osteoporosis and fractures, particularly in women. However, calcium may also increase the risk of heart attack and stroke. Inke Thiele from the Institute of Epidemiology in Neuherberg, Germany and co-workers, in a study of 1,601 people aged 60 to 80, found that calcium supplements increased the risk of atrial fibrillation (a heart arrhythmia) that could increase the risk of heart attack and stroke. Vitamin D was linked to a lower risk of peripheral arterial disease. We need more research to assess the relative risks and benefits of calcium supplements. (Atherosclerosis, published online June 19, 2015) ■



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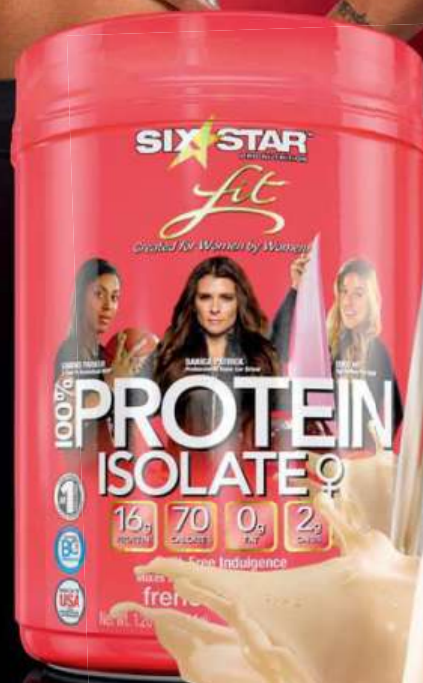
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COFFEE PROMOTES Blood Sugar Regulation

■ Large population studies have found that coffee drinking promotes blood sugar regulation and reduces the risk of type 2 diabetes. Some scientists have speculated that chemicals in coffee called chlorogenic acids help regulate blood sugar levels. **A study from the University of Copenhagen in Denmark found that coffee drinking improved blood sugar control, but found no difference between light and dark roast coffee.** Dark roast is higher in chlorogenic acids. Regular coffee drinking is a good way to promote blood sugar regulation and prevent type 2 diabetes. It doesn't seem to matter which kind of coffee you drink. (European Journal of Nutrition, published online September 5, 2015)

CHRONIC CAFFEINE CONSUMPTION REDUCES THE RISK OF ALZHEIMER'S DISEASE

■ Consuming caffeine in a dose of 1.5 milligrams per kilogram of body-weight per day protects against Alzheimer's disease— according to scientists from Mansoura University in Egypt. That is roughly 140 milligrams per day for a 200-pound man. Daily caffeine ingestion protected vital brain centers in rats with chemically induced Alzheimer's disease. **Studies on humans have found that chronic coffee consumption reduces the risk or delays the onset of dementia by nearly 20 percent,** particularly in older adults. Caffeine, antioxidants and anti-inflammatory chemicals in coffee promote mental health. (International Journal Clinical Experimental Pathology, 8: 7710-7728, 2015)

WEIGHT TRAINING REDUCES Markers of Inflammation

■ Chronic inflammation is the body's response to ongoing stress due to obesity, high blood pressure, impaired immune function and emotional stress. Inflammation promotes blood vessel disease and increases the risk of heart attack and stroke. **Brazilian scientists found that 14 weeks of weight training, three times per week, decreased blood markers of inflammation and reduced body fat— but had no effect on bodyweight in middle-aged men with at least two components of the metabolic syndrome (MS).** Symptoms of MS include high blood pressure, insulin resistance, abdominal fat deposition, type 2 diabetes and abnormal blood fats. The metabolic syndrome is usually accompanied by low-grade, chronic inflammation. Moderate-intensity weight training improves metabolic health and decreases inflammation in middle-aged men. (Nutricion Hospitalaria, 32:792-798, 2015).

HIGH-INTENSITY INTERVAL TRAINING

HELPFUL IN FATTY LIVER DISEASE

■ High-intensity interval training (HIIT) helps treat fatty liver disease— according to a study from Newcastle University in the U.K. High-intensity interval training involves performing a series of short, intense bouts of exercise followed by rest. It has been popular with athletes for nearly 100 years. Recently, scientists have found that HIIT also builds aerobic capacity quickly in recreational athletes, older adults and patients with metabolic disorders. **The Newcastle University study found that 12 weeks of HIIT lasting 30 to 40 minutes per workout reduced liver fat and improved body composition and cardiovascular function in middle-aged adults with fatty liver disease.** Fatty liver disease, characterized by fat accumulation in the liver, is usually due to obesity or excessive alcohol consumption. High-intensity interval training is an effective way to treat this health problem. (Clinical Science, published online August 11, 2015) »

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SHOULD YOU DRINK EIGHT GLASSES OF WATER PER DAY?

■ A longstanding myth is that people should drink at least eight glasses of water per day—according to pediatrician Aaron Carroll. **Water makes up about 72 percent of bodyweight and is essential for life.** We have extremely sensitive fluid regulators in the body, including a thirst center in the lower part of the brain (hypothalamus). We get thirsty when we get only slightly dehydrated. The United States Department of Agriculture Nutritional Recommendations for Americans advises people to drink water when they are thirsty. Also, most foods contain significant amounts of water, particularly fruits and vegetables. Athletes with high sweat rates, however, should avoid dehydration and drink to restore lost bodyweight after intense exercise. (The New York Times, September 14, 2015)



The Psychology of SELFIES

■ Selfie sticks are the ultimate symbols of narcissism. Some psychologists have gone so far as to say that selfie stick users have narcissistic, psychopathic and Machiavellian personality traits. They have increased needs for self-gratification, particularly when they post their photos online. Frequent selfie stick users are insecure and score lower on measures of belonging and meaningful existence. These are the same people who get upset when they don't get "likes" on their Facebook entries. Other psychologists contend that selfies are just another form of communication. It's predictable that selfies would become fertile ground for psychobabble. (The New York Times, August 8, 2015)



MASSAGE IMPROVES PERFORMANCE AFTER EXERCISE-INDUCED MUSCLE DAMAGE

■ Fifteen minutes of massage to the calf muscles following muscle-damaging exercise resulted in greater muscle strength and proprioception, compared to a group receiving no massage—according to researchers from Korea. Proprioception is the perception of movement and spatial orientation of various parts of the body. Muscle damage was induced using eccentric contractions, which injure important parts of the muscle cells (Z lines) and trigger secondary inflammation. Delayed onset muscle soreness (DOMS) has been a serious challenge to muscle physiologists for more than 100 years. Treatments such as stretching, ice, heat, active exercise, nonsteroidal anti-inflammatory drugs and muscle relaxers have been largely ineffective. Post-exercise massage might help prevent DOMS. (Journal Strength Conditioning Research, 29: 2255-2260, 2015)

SPICY FOODS PREVENT PREMATURE DEATH

■ Eating spicy foods three to six days per week reduces death from all causes (deaths per year) and the risk of death from cancer, coronary artery disease and respiratory disease—according to researchers from China. They examined nearly 250,000 healthy men and women aged 30 to 79. **Eating spicy foods decreased the risk of premature death by about 14 percent.** The effects of spicy foods on death rates were greatest in people who did not drink alcohol. Spicy foods contain several chemicals such as capsaicin that have been linked to metabolic health and weight reduction. (British Medical Journal, 351: H 3942, 2015) ■

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BEAUTY QUESTION OF THE MONTH

with Dr. Jennifer Haley

Does consuming sugar have any negative effects on your skin?

Sugar has zero nutritional value— it ruins both your figure and your skin. Sugar is highly addictive, affecting the brain like heroin, and it doesn't contribute to satiety, so overeating is inevitable. Your skin represents your internal health, and the effects of sugar on both can be horrifying.

When excess sugar circulates in the bloodstream, it attaches to proteins in a process called glycation, producing advanced glycation end products (AGEs). AGEs cause protein fibers to become stiff and malformed. The proteins in your skin that are most prone to glycation, collagen and elastin, are the same ones that produce a youthful, radiant, supple complexion. AGEs accumulate in the collagen and elastin of your skin, causing it to become thin, discolored and rigid, resulting in sallowness, wrinkles and sagging. Furthermore, AGEs deactivate your body's natural antioxidants, leaving you more vulnerable to sun damage and

environmental toxins. Youthful skin is more resilient, but the damage accumulates and starts to show its aging effect in your 30s. If you are young and not worried about aging yet, be aware that sugar and high-glycemic foods raise insulin levels and lead to total body inflammation. In the skin, this presents as rashes, rosacea and acne breakouts. A 12-week randomized controlled trial looking at 23 males between the ages of 15 and 25 who adhered to a strict low-glycemic diet had significant improvement in their acne. Another study looked at 32 Korean adults, 20-27 years old, who ate a low-glycemic diet for 10 weeks. Skin biopsies revealed that both the size of the oil glands and amount of inflammatory cells were reduced.

Bottom Line:

- *Most of your carbohydrates should come from vegetables and real foods.* Avoid packaged and processed foods, as these quickly convert to sugar. Avoid hidden sugars in food— barley malt, dextrose, corn syrup, fruit juice concentrate, maltose, maple syrup, molasses, turbinado, agave syrup and honey. Especially avoid high-fructose corn syrup, which produces more AGEs than other types.

- *Include more antioxidants in your diet.* Antioxidants have a protective effect against the formation of AGEs by preventing sugar from attaching to proteins. Colorful vegetables, berries, nuts and green tea are essential.

- *Exercise.* Regular exercise uses up excess sugar in the bloodstream as fuel, making it unavailable to produce AGEs. Keep moving!

- *Supplement your diet with vitamins B1 and B6, which are potent AGE inhibitors.* Chromium, B3, and magnesium improve blood sugar control, making sugar less available for AGE formation. The amino acid carnosine can protect against AGE buildup.

- *Spice it up.* Certain spices may help inhibit the formation of AGEs, among them cinnamon, cloves, oregano, allspice, ginger and garlic.

- *Wear SPF 30-plus sunscreen with zinc oxide every day.* AGEs occur more frequently in sun-exposed skin, and AGEs make skin more prone to UV damage, so daily broad-spectrum sun protection is crucial.

- *Topical nourishment with retinoids (retinol, tretinoin, retin-A) nightly will help build new collagen and actually reverse some damage.* SkinCeuticals A.G.E. Complex specifically targets AGEs in the skin. Every morning, use a high-quality topical vitamin C serum or cream underneath your sunscreen.

Have a skin-related question for Dr. Haley? Email your question to editor@fitnessrxwomen.com and you could see it answered in the next issue!

Dr. Jennifer Haley is a board-certified dermatologist with a degree in Nutrition Science from Cornell University. She has been an NPC bikini competitor, consultant to the US Capitol, and is the co-founder of the skin care line, Derivations— which offers complimentary skin consultations. She enjoys an active lifestyle in Scottsdale, AZ and Montrose, CO with her husband and three boys. »

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FERMENTED SKIN CARE

■ Many people probably associate fermentation (which is the breakdown of a substance using microorganisms) with food and cooking. Well, in Korea, fermented skin care has been popular for a long time, and it's now making its way to other parts of the world. The idea is that when you ferment food in salt water, bacteria growth is encouraged, which has shown to be beneficial not only for digestion but also *may* be good for skin—making active ingredients easier to absorb, according to reports. As reported in *The Telegraph*, a 2012 study by the Department of Food and Nutrition at Korea University found that fermented red ginseng had greater concentrations than non-fermented and also increased anti-wrinkling. Even though there are more products in the market that include prebiotics, studies on the effectiveness are currently limited. ("Why fermented skincare is the latest beauty fix," www.telegraph.co.uk; June 5, 2015)



Skin Care Issues from Exercising— SOLVED

■ Whether you exercise two or seven times a week, discouraging skin issues are guaranteed to arise. Here to weigh in on everything from strange rashes to pimples popping up everywhere is Dr. Amy Wechsler, acclaimed dermatologist and psychiatrist—giving us some tips on treating a variety of skin care problems as a result of exercising.

THE ISSUE: ATHLETE'S FOOT

The Cause: Athlete's foot occurs when the fungus grows on the feet. This happens when your skin comes in direct contact with the fungus by an infected person or by touching surfaces contaminated with the fungus. The foot fungus lives in warm, moist environments.

The Solution: Make sure to wear flip-flops when showering at the gym to prevent harmful germs. Athlete's foot is often treated with an over-the-counter topical antifungal medication. If an over-the-counter topical does not clear up the infection, your doctor may prescribe a topical or oral prescription-strength antifungal medication.

THE ISSUE: BODY ACNE

The Cause: Body acne can be produced by a hair follicle attached to an oil gland, so therefore it can occur anywhere on the body. Chest, shoulder or back acne are more common if you live an active lifestyle.

The Solution: The more tightly your clothing fits against your body, the more dirt, oil and sweat gets trapped against your skin. Switch to looser fitting clothing that allows your skin to breathe throughout the day. To help prevent body breakouts, make sure to shower as quickly as possible following your workout. When showering, use a gentle body wash that contains salicylic acid in the shower daily to help reduce inflammation and unclog pores.

THE ISSUE: CHAFING

The Cause: Chafing is the irritating result of skin rubbing against skin or clothing. This can occur anywhere on your body, most commonly on the thighs, groin and underarms. Chafing results in extremely painful red sore patches that can cause you to experience discomfort whenever you go to work out or even walk.

The Solution: To prevent skin chafing, the goal is to decrease the amount of friction to your skin. Try using a silicone based product like Body Glide on the spots where chafing occurs to help reduce friction to the skin. Lastly, when exercising, make sure to wear proper-fitting clothes made with synthetic fibers.

THE ISSUE: BLISTERS

The Cause: Blisters can develop during exercise due to friction or pressure between the skin or from exercise equipment like weights. The pressure causes a fluid called serum to build up beneath the skin and cause small bumps.

The Solution: Exercise gloves can be worn when lifting weights to prevent blisters from forming. If blisters do occur, first wash the area with a gentle soap and water. Then dry the area thoroughly and use hydrogen peroxide or another sanitizing solution to swab the area to kill any harmful bacteria. Finally, cover the blister with a bandage to protect it from being infected and from additional irritation.

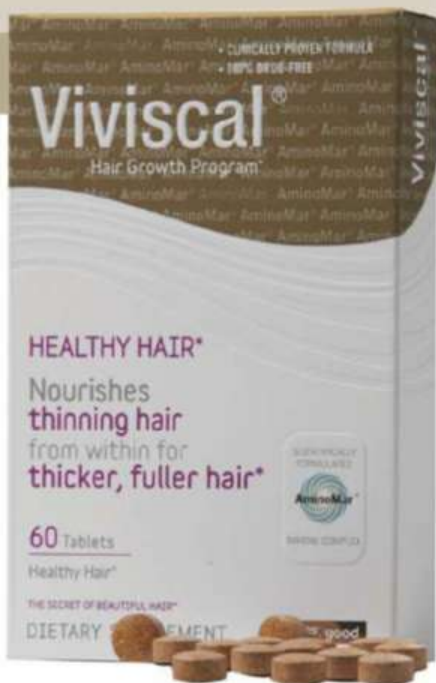
DNA Testing Could Personalize Beauty Products

■ Companies like GeneU, based in London, could change the way consumers purchase beauty products. A DNA test, which customers know the results of in 30 minutes, looks at variations in two genes: one that contains instructions for how quickly the body degrades collagen, and the other for antioxidant protection. The results are fed into an algorithm, which finds two of the company's 18 serums that are the best fit for that particular consumer. But such a service doesn't come cheap. It costs about \$940 for the test plus a two-week supply of the product. "For us it's about giving people the right concentrations that their skin can metabolize," Christofer Toumazou, the company's founder and a professor at Imperial College London, told *The New York Times*. ("Can DNA Testing Personalize Skin Care?" www.nytimes.com; June 16, nnn2015) ■



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HOLIDAY VEGGIE PATÉ

*Here's a healthy-licious alternative to conventional paté.
Best of all, it's legal on any diet!*

Totals Per Serving

Calories: 123.7
Protein: 5.6
Carbohydrate: 9.6 grams
Fat: 7.5 grams
Cholesterol: 0 mg
Sodium: 90 mg

NUTRITIONAL PROFILE (PER SERVING)

MACRONUTRIENTS		VITAMINS	
KCAL:	123.788	A (RE):	18.982
PRO g:	5.689	C mg:	3.210
CHO g:	9.687	THIAMIN mg:	0.098
CHOL mg:	0.000	RIBOFLAVIN mg:	0.100
FAT Total g:	7.574	NIACIN mg:	0.417
SATURATED FAT g:	1.302	PYRIDOXINE (B6) mg:	0.108
MONOUNSATURATED FAT	4.213	FOLATE mcg:	16.685
POLYUNSATURATED FAT	1.318	COBALAMIN µg:	0.015
TRANS FATTY ACID g:	0.000	MINERALS	
DIETARY FIBER, TOTAL g:	2.050	SODIUM mg:	90.032
SUGAR, TOTAL g:	2.881	POTASSIUM mg:	187.449
		CALCIUM mg:	18.342
		IRON mg:	1.288

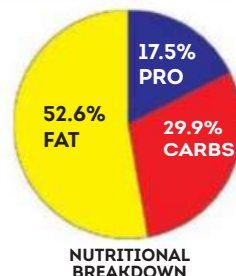


INGREDIENTS:

2 TEASPOONS EXTRA VIRGIN OLIVE OIL
2 MEDIUM ONIONS, CHOPPED
1 8.5-OUNCE CAN SWEET PEAS, DRAINED
¾ CUP RAW CASHEWS
THE WHITES OF FOUR HARD-BOILED EGGS

Sauté the onions in the oil until translucent and slightly caramelized. In a food processor or blender, process the cashews until coarsely ground. Add the onions and process. Add the peas and egg whites and process until smooth but still of firm texture.

Transfer into a small decorative bowl and serve with veggies and crackers— whatever you would offer with regular paté! Makes 8 servings.



NUTRITIONAL PROFILE (PER SERVING)

MACRONUTRIENTS		VITAMINS	
KCAL:	391.570	A (RE):	195.917
PRO g:	41.654	C mg:	78.500
CHO g:	31.603	THIAMIN mg:	0.178
CHOL mg:	142.889	RIBOFLAVIN mg:	0.285
FAT Total g:	10.172	NIACIN mg:	16.761
SATURATED FAT g:	2.181	PYRIDOXINE (B6) mg:	0.908
MONOUNSATURATED FAT g:	4.804	FOLATE mcg:	58.042
POLYUNSATURATED FAT g:	1.812	COBALAMIN µg:	0.512
TRANS FATTY ACID g:	0.005		
DIETARY FIBER, TOTAL g:	2.474	MINERALS	
SUGAR, TOTAL g:	3.694	SODIUM mg:	404.212
		POTASSIUM mg:	615.778
		CALCIUM mg:	68.139
		IRON mg:	2.555

THAI CHICKEN STIR FRY WITH RICE NOODLES

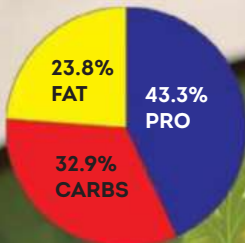
This recipe calls for chicken, but it's actually a creative way to use leftover holiday turkey. If using leftover turkey, add the meat while sautéing the garlic and ginger, and proceed with the remainder of the recipe.

INGREDIENTS:

- 1 BOX (9 OZ.) PAD THAI RICE NOODLES
- 1 TABLESPOON PEANUT OIL (OR OLIVE OIL)
- 3 GARLIC CLOVES, MINCED
- 1 TABLESPOON FRESHLY GRATED GINGER
- 1 1/4 POUNDS BONELESS, SKINLESS CHICKEN BREASTS, CUT INTO 1/2 INCH STRIPS
- 2 CUPS BROCCOLI FLORETS, STEMS REMOVED
- 1 LARGE RED BELL PEPPER, CUT INTO STRIPS
- 1 LARGE EGG, BEATEN
- 1/4 CUP CHICKEN BROTH
- 2 TABLESPOONS SOY SAUCE
- 1 TEASPOON SUGAR, OR SUGAR SUBSTITUTE EQUIVALENT TO THE SWEETNESS OF 1 TSP SUGAR
- 1/4 TEASPOON RED PEPPER FLAKES
- 1/4 CUP CHOPPED ROASTED PEANUTS
- 1/4 CUP CHOPPED FRESH CILANTRO
- LIME WEDGES

Bring 3 quarts of water to a boil in a large saucepan. Add noodles and cook until the "al dente" stage, about five minutes. Rinse with cool water in a colander while draining. Heat oil in a large non-stick skillet over medium-high heat. Add garlic and ginger, cook quickly, about 30 seconds. Add chicken and stir until browned and almost cooked through, about 3 minutes. Add broccoli and bell pepper and cook until vegetables are crisp-tender. Stir in egg and cook one minute more. Add broth, soy sauce, sugar, and red pepper flakes, then, stir in noodles. Served garnished with peanuts, cilantro, and lime wedges. Makes 4 servings. »

NUTRITIONAL BREAKDOWN



Totals Per Serving

Calories: 391
 Protein: 41.6 grams
 Carbohydrate: 31.6 grams
 Fat: 10.1 grams
 Cholesterol: 142.8 mg
 Sodium: 404.2 mg

PINEAPPLE-GINGER GLAZED SWEET POTATOES

A more sophisticated and healthful take on Mom's sweet potato casserole.

INGREDIENTS:

4 SMALL SWEET POTATOES (ABOUT 2 POUNDS) PEELED AND SLICED INTO 1/4 INCH ROUNDS
 1/2 CUP OF BUTTER, ONE STICK (PASTURED IF POSSIBLE)
 2 TABLESPOONS AGAVE SYRUP
 1 TABLESPOON GRATED FRESH GINGERROOT
 3/4 CUP PINEAPPLE JUICE
 1/2 CUP PACKED BROWN SUGAR OR BROWN SUGAR/BROWN SUGAR SUBSTITUTE BLEND, LIKE SLENDA® BROWN SUGAR BLEND; EQUIVALENT TO THE SWEETNESS OF 1/2 CUP OF BROWN SUGAR (IF YOU USE SLENDA® BRAND, THAT AMOUNT WILL BE 1/4 CUP)

Totals Per Serving

Calories: 210.9
 Protein: 1.13 g
 Carbohydrate: 24.8 grams
 Fat: 11.6 grams
 Cholesterol: 30.5 mg
 Sodium: 34.3 mg

Over medium high heat, melt butter. Add agave syrup, ginger, pineapple juice and brown sugar. Bring to a simmer, whisking until smooth. Reduce heat and simmer about five minutes until slightly thickened.

Preheat oven to 350 degrees. Arrange sweet potatoes in a 13- x 9-inch glass baking dish. Pour pineapple sauce evenly over sweet potatoes. Bake about 45 minutes or until potatoes are tender, basting often. Makes 10 servings.

NUTRITIONAL PROFILE (PER SERVING)

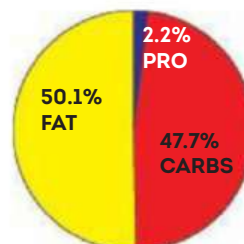
MACRONUTRIENTS

KCAL: 210.920
 PRO g: 1.137
 CHO g: 24.818
 CHOL mg: 30.530
 FAT Total g: 11.604
 SATURATED FAT g: 7.308
 MONOUNSATURATED FAT g: 2.990
 POLYUNSATURATED FAT g: 0.451
 TRANS FATTY ACID g: 0.465
 DIETARY FIBER, TOTAL g: 1.818
 SUGAR, TOTAL g: 14.313

VITAMINS

A (RE): 933.706
 C mg: 4.658
 THIAMIN mg: 0.066
 RIBOFLAVIN mg: 0.054
 NIACIN mg: 0.418
 PYRIDOXINE (B6) mg: 0.159
 FOLATE mcg: 12.680
 COBALAMIN µg: 0.024
 SODIUM mg: 34.338
 POTASSIUM mg: 233.288
 CALCIUM mg: 24.083
 IRON mg: 0.439

NUTRITIONAL BREAKDOWN



TURKEY SAUSAGE CHILI

When it gets chilly outside, it's time for chili inside! Here's my healthy take on a fabulous post-workout meal.

INGREDIENTS:

- 1 POUND PACKAGE MIXED DRIED BEANS, RINSED AND PICKED OVER
- 9 CUPS FILTERED WATER, PLUS MORE IF NECESSARY
- 1/2 POUND SMOKED TURKEY SAUSAGE (TURKEY KIELBASA WORKS WELL)
- 1 LARGE ONION, CHOPPED
- 1 CELERY STALK, CHOPPED
- 1 BAY LEAF
- 1 14-16 OUNCE CAN STEWED TOMATOES
- 2 TABLESPOONS BROWN SUGAR OR BROWN SUGAR/BROWN SUGAR SUBSTITUTE BLEND, LIKE SPLENDA® BROWN SUGAR BLEND; EQUIVALENT TO THE SWEETNESS OF 2 TABLESPOONS OF BROWN SUGAR (SO IF YOU USE SPLENDA® BRAND, THAT AMOUNT WILL BE 1 TABLESPOON)
- 1 TEASPOON DRIED OREGANO
- 1 TABLESPOON CHILI POWDER
- 1 TEASPOON GROUND CUMIN
- 1/2 TEASPOON DRIED MUSTARD
- 1 TABLESPOON CHAMPAGNE VINEGAR
- 1/4 TEASPOON TABASCO SAUCE
- 1/2 TEASPOON SALT, OR TO TASTE

Cover the beans in cold water and let soak 4 hours or overnight. Drain in a colander. In a large soup pot or Dutch oven, bring 9 cups filtered water to a boil. Add the beans, reduce the heat to low and simmer, covered for 1 hour.

Add the whole sausage, onions, celery and bay leaf, and cook 30 minutes longer. Add the stewed tomatoes, mashing up any large pieces. Add the brown sugar, oregano, chili powder, cumin and mustard. Continue to cook, 30 to 60 minutes or until the beans are tender. Remove the sausage, cut into thin slices and return it to the chili. Adjust the thickness of the chili by simmering longer if too thin and adding liquid if too thick.

Discard the bay leaf, stir in the vinegar and Tabasco, and season with salt.

Serve immediately or keep in the refrigerator for up to 3 days. Reheat before serving. Makes 6 servings.

Note: For a smoother textured chili, try using an immersion blender to puree some or all of the beans, tomatoes and turkey sausage. ■

NUTRITIONAL PROFILE (PER SERVING)

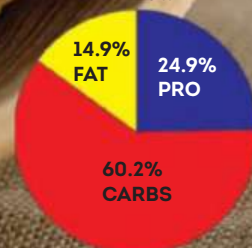
MACRONUTRIENTS		VITAMINS	
KCAL:	254.048	A (RE):	46.296
PRO g:	15.953	C mg:	5.547
CHO g:	38.573	THIAMIN mg:	0.428
CHOL mg:	16.443	RIBOFLAVIN mg:	0.195
FAT Total g:	4.243	NIACIN mg:	1.668
SATURATED FAT g:	1.094	PYRIDOXINE (B6) mg:	0.290
MONOUNSATURATED FAT g:	1.436	FOLATE mcg:	225.744
POLYUNSATURATED FAT g:	1.219	COBALAMIN µg:	0.079
TRANS FATTY ACID g:	0.000	MINERALS	
DIETARY FIBER, TOTAL g:	8.482	SODIUM mg:	401.988
SUGAR, TOTAL g:	3.814	POTASSIUM mg:	897.752
		CALCIUM mg:	100.481
		IRON mg:	4.269



Totals Per Serving

Calories: 254
 Protein: 15.9 grams
 Carbohydrate: 38.5 grams
 Fat: 4.2 grams
 Cholesterol: 16.4 mg
 Sodium: 401.9 mg

NUTRITIONAL BREAKDOWN



ADVANCED LIFTS TO
SCULPT YOUR LOWER BODY

Strong, Shapely LEGS

WITH IFBB PRO
JESSIE HILGENBERG

Are you a seasoned fitness fanatic ready to kick your training up a notch?

If so, our cover model IFBB Pro Jessie Hilgenberg has a killer lower body program to help you achieve the shapely, carved out quads, hamstrings and glutes you desire.

If you aren't ready to work, then this program is not for you. "These workouts force your muscles to grow and change by incorporating volume, short rest periods, tempo training, time under tension, drop sets and partial reps," explains Jessie.

Said simply, Jessie's STRONG, SHAPELY LEGS Program brings the intensity. Are you ready to match it?

By JAIME BAIRD | Photography by IAN SPANIER



PROFILE

NLA For Her &
Bodybuilding.com athlete
Mom, Fitness Coach,
Writer and Model
Born Reno, NV
Resides Phoenix, AZ
34 years old



Hair and Make-up by
Carissa Ferreri
Styling by Trish Stella
Opposite page:
Sports Bra by Onzie
Capris by Nike

This page:
Sports Bra and Shorts by Forever 21,
Sneakers by Nike

WHAT TO EXPECT

Jessie breaks down her approach to this workout.

TWO LEG DAYS. “My thought process behind the leg workouts is to get the most damage done to the muscle while you’re in the gym. By splitting up your leg training into two separate workouts (hamstrings/glutes and quads), you can get in more volume and work to specific areas.”

START BIG. “I built the hamstring/glute workout in the order of the most taxing exercises to the body and energy systems to the least. That’s why you’ll see squats, leg press and deadlifts at the beginning and leg curls at the end. This workout has 22 sets— it’s not easy. But making changes to your legs isn’t easy. You only have to do this once per week. Any other work to your hamstrings and glutes will be indirect (sprints, quad workout, etc.). So, make it count! It won’t happen overnight, but with consistency and a lot of intensity, you will see and feel the changes!”

MAKE IT BURN. “This quad workout is built a little differently. It’s meant to completely fatigue your quads and force that quad sweep! We do lunges and leg extensions twice using different techniques each time. The first lunges we do are in the Smith machine, because it helps to keep the torso upright. When we lunge freely, we can tend to lean forward a bit— this will engage your hamstrings and glutes more and turn off your quads. We do leg extensions twice, because they isolate the quads. Earlier in the workout we do them with our toes out to build that teardrop shape. The second time, we do partial reps to get the burn going and exhaust the muscles.”

THE WORKOUTS

- **PERFORM EACH WORKOUT ONCE A WEEK WITH AT LEAST TWO DAYS IN BETWEEN.**
- **WARM-UP: COMPLETE FIVE TO 10 MINUTES OF CARDIO AND THE SPECIFIED RESISTANCE SETS.**

HAMSTRINGS/GLUTES

EXERCISE	SETS	REPS
SUMO STANCE SQUATS	2	15-20 (WARM UP SETS, BAR ONLY)
	3	12
LEG PRESS, <i>FEET HIGH AND TOGETHER</i>	4	15 (QUICK TEMPO)
AMERICAN DEADLIFTS	4	15
BARBELL GLUTE BRIDGE	4	15
GLUTE/HAM RAISE	3	10 (OR UNTIL FAILURE)
LYING LEG CURLS, <i>ECCENTRIC FOCUSED</i>	4	15 (DROP SETS 7-8 REPS, 7-8 REPS)

QUADRICEPS

EXERCISE	SETS	REPS
LEG EXTENSIONS	2	15-20 (LIGHT WARM-UP SETS)
SUPERSET HACK SQUAT LEG EXTENSIONS, <i>TOES OUT</i>	3	12-15
SMITH MACHINE LUNGES	4	12
LEG PRESS, <i>FROG STANCE</i>	4	12
LEG EXTENSIONS, <i>PARTIAL REPS</i>	3	12-15
WALKING LUNGES	3	15 EACH LEG

THE EXERCISES



SUMO STANCE SQUATS

TARGETING THE GLUTES AND ADDUCTORS

Take a wider than shoulder-width stance and turn your toes out about 45 degrees. Make sure to keep your chest high and push through your heels.

JESSIE SAYS: “Once you get to the bottom of your squat, focus your mind on squeezing your adductors and glutes before you rise up.”



LEG PRESS

FEET HIGH TO HIT THE GLUTES AND HAMS

Position feet about 6 inches apart and high on the platform. Perform a few reps and adjust foot placement until you feel the work in the hamstrings and glutes.

JESSIE SAYS: "Take your time during the first couple of reps, and when you know you're targeting the right area, pick up that tempo."



“It won't happen overnight, but with consistency and a lot of intensity, you will see and feel the changes!”



AMERICAN DEADLIFTS

AN RDL WITH A GLUTE FOCUS

Perform this movement like a Romanian deadlift but add a slight posterior pelvic tilt to finish the rep.

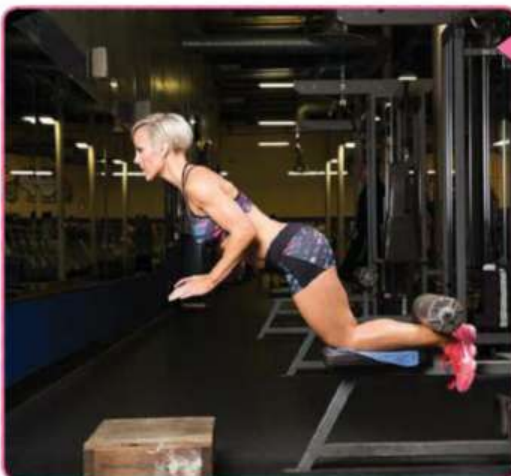
JESSIE SAYS: "If you really work on tucking your pelvis at the top of the rep, you'll get SO much more glute activation out of this exercise!"

BARBELL GLUTE BRIDGE

A BUTT-BUILDING
MUST-DO

When setting up this movement, flatten out your lumbar spine and tilt your pelvis forward to maximize the glute work. Focus on extending your hips as high as you can while keeping the posterior pelvis tilt.

JESSIE SAYS: "Don't be scared to use 35- or 45-pound plates for these- you'll be surprised how strong your glutes are. Plus, it's much easier scooting under the bar to get into place when the plates are larger!"



GLUTE/HAM RAISE

AN ADVANCED
HAMSTRING
EXERCISE

Make sure to keep your body from head to knees in a straight line. Flex your hamstrings and glutes to control the movement. When you reach the box, gently press off your hands to help you return to the upright position.

JESSIE SAYS: "Make sure you have enough padding for your knees and that you try several different heights of landing boxes until you find one that is right for your current level of strength. These are hard, but doable and will build up your hamstrings like no other!"

LYING LEG CURL

A FINAL HAMSTRING BURNOUT

Intensify this basic move by slowing down the eccentric or lowering part of this exercise (use a count of three).

JESSIE SAYS: "Your hamstrings will be toast by this point, so make each set a drop set. I typically complete seven to eight reps each set before dropping the weight for the remaining reps."



LEG EXTENSIONS

TOES OUT TO TARGET THE TEARDROP

Perform reps with the feet turned out to a comfortable position. Maintain that position through the full range of motion.

JESSIE SAYS: "This positioning will put a bit more focus on the vastus medialis muscle, which provides tight teardrop look above the knee."



HACK SQUAT

A PERFECT START TO QUADS

Position feet about shoulder width, and lower to at least 90 degrees.

JESSIE SAYS: "Watch that your knees stay strong and sturdy— don't let them knock together. You'll get a great leg pump to kick off this quad workout."

“There are A LOT of women with incredible physiques— it's not enough. Find your strengths and create something from them. And most importantly, be you.”



SMITH MACHINE LUNGES

QUAD TORCHING, STATIONARY VARIATION

Do not elongate your lunge too much— a narrower position will direct more work to your quads

JESSIE SAYS: "Take advantage of the stable bar, keeping your torso upright so you can work on the mind/muscle connection to your quads during the exercise."



LEG PRESS

TARGET QUADS WITH A FROG STANCE

Position heels low on the platform with your heels almost touching and toes pointed out to at least a 45-degree angle.

JESSIE SAYS: "This is a tricky one to get right. Fuss with your foot position until you really feel the focus in your quads. Once you do, you'll know. You'll hardly need to add any weight at all because this position is so challenging!"

LEG EXTENSIONS (NOT SHOWN)

MAKE IT BURN WITH PARTIAL REPS

Extend all the way to the top of the rep, lower halfway down and then press back up to full extension. Choose a weight that you get a good burn without stressing your knee joint.

JESSIE SAYS: "Close your eyes, go to your happy place and just focus on the reps. You can do it!"



WALKING LUNGES

FINISH STRONG WITH A HIGH-INTENSITY MOVE

As with the Smith machine variation, focus on shorter strides and an upright torso to focus the work in the quads.

JESSIE SAYS: "Don't rush, take your time to focus on form and make sure to bend your knees to 90 degrees to get the full range of motion."

GET TO KNOW JESSIE

Jessie tells us all about her post-baby body, Jessie's Girls, her best advice for fitness success and more!

FITRX: What is it about fitness that you love so much?

JESSIE: What I love about fitness is that, just like sports when I was younger, I can always challenge myself, grow, learn and get better. The coolest part about challenging yourself in fitness is that the end result is you are always some version of being more fit! Whether you are leaner, stronger, bigger, faster, happier, more confident, healthier or simply just not starving anymore— you win!

FITRX: You shot for this cover about six months after your daughter Sammie was born— that's an impressive post-baby body bounce back. What advice do you have for moms-to-be?

JESSIE: Get healthy and fit before you become pregnant, and then stay fit and healthy during your pregnancy. Of course, if you have any health issues before or during pregnancy or aren't able to work out during pregnancy due to a risk, that is a different situation. But if you do not have health issues and are planning a pregnancy, get to the gym and start creating a habit of tracking your food and your macros. Working out and eating healthy should be part of your plan to become pregnant. And, as long as you and your baby are healthy and safe, there is no reason why you shouldn't keep exercising. Just listen to your body, and make adjustments along the way. You can also follow my Jessie's Girls Prenatal Edition program to guide your way through your workouts and nutrition throughout your pregnancy!

FITRX: Tell us about your fitness group Jessie's Girls.

JESSIE: Jessie's Girls are my second family. I could leave it at that, and all of them would know exactly what I am talking about. We are so close! I wrote four Jessie's Girls e-book training programs in 2014 and launched them on my website (JessieFitness.com) hoping that a few awesome women out there would want to experience what it feels like to have badass workouts, get stronger, leaner and more confident while fueling their bodies with the proper calories and macros to fit their individual physiques. Each one of my programs is a full 12- to 14-week system, which incorporates everything that needs to go into changing your life and includes lifetime access to my private, online community of Jessie's Girls around the globe. The girls and I share recipes, progress photos, struggles, successes, accomplishments, motivation, answer each other's questions and pretty much everything else that helps inspire each other to keep kicking butt!

FITRX: Tell us about what you teach/preach to your Jessie's Girls.

JESSIE: The heart of what I teach is for each Jessie's Girl to get back to why she started. To stop focusing on the desired end result and to realize that she is exactly where she is meant to be right now and to discover how to love her body at this stage, because from here, she can only go forward and transform. What makes my Jessie's Girls programs so cool is that, when you start, you are scared of lifting heavy, scared to not do cardio every day and scared to eat more. Their posts in our private group go from "Are you sure this will work?" and "I'm scared of these carbs" to "BAM... look at my biceps" and "I lost 3 inches around my waist, can see my abs for the first time in six years but haven't lost any scale weight... keep lifting, ladies, trust the process!" I coach and guide women to fall in love with their bodies, and everything they are capable of at every stage. The journey becomes their transformation, not just what they look like at the end of it.

FITRX: You've obviously built a thriving fitness business. What advice do you have for other women striving to do the same?

JESSIE: Don't stop. Be relentless with your goals and dreams. Every time you hear a "no," try again. Call again. Follow up. Say thank you.



Stand out. There are A LOT of women with incredible physiques— it's not enough. Find your strengths and create something from them. And most importantly, be you.

FITRX: What do you feel separates those who successfully reach their fitness goals and those who do not?

JESSIE: Balance. I always tell women to ask themselves, "Can I maintain this forever?" If the answer is no, it won't last. So, stop being so extreme. Cut out really bad nutrition habits, but don't cut out the foods you absolutely love and enjoy entirely. Just learn how to time that meal around your workouts so that it works for you, not against you. And/or, have it twice per week instead of six times per week. If you love running, but want to also build amazing glutes, cut your weekly miles back so you still get to hit the pavement but perhaps just not quite as much as you were doing before.

EXAMPLE MEAL PLAN

Jessie follows a flexible diet— a method where she targets daily macronutrient goals with the foods of her choice. These foods are always changing, but here's a snapshot of one day in the life:



BONUS CONTENT
FOR EVEN MORE STRONG, SHAPELY LEGS CONTENT, VISIT FITNESSRXWOMEN.COM/JESSIEH



MEAL 1 (7:00AM)

3/4 cup oats, 2 scrambled egg whites, 1 whole scrambled egg
1 cup raw spinach, 1 packet Basic Greens, 6 tbsp pasteurized liquid egg whites and water blended to drink
2 NLA for Her Omegas
1 NLA for Her CLA

MEAL 2 (9:30AM)

1 tbsp peanut butter mixed into 1/3 cup plain Greek yogurt

MEAL 3 (11:30AM)

Tacos: 3 oz flank steak, 1.5 oz avocado, 2 corn tortillas
2 NLA for Her Omegas
1 NLA for Her CLA

MEAL 4 (1:45PM - PREWORKOUT)

1 cup white rice, 3 oz chicken

WORKOUT (3:30PM)

1 scoop NLA for Her Uplift
1 capsule Shred Her
1 capsule Her Carnitine
2 scoops Her Aminos in 40 oz water jug (for during workout)
Creatine

POST-WORKOUT (4:15PM)

1 scoop NLA for Her Whey
1 scoop Her Aminos in water
1 capsule Her Carnitine

MEAL 5 (5:00PM)

Post-Workout Protein Cereal: 1-3/4 cup Rice Chex, 1/2 cup almond milk, 1 scoop NLA for Her Whey

MEAL 6 (8:00PM)

3 oz flank steak, 2 oz avocado, 1 cup brown rice, 10 grilled asparagus spears (cooked with olive oil)
2 NLA for Her Omegas
1 NLA for Her CLA
2 NLA for Her Multi

160 g protein // 225 g carbs //
70 g fat // 30 g fiber // 10 g sugar

FUEL UP TIPS

JESSIE SHARES HER TOP NUTRITION TIPS FOR SHAPING KILLER LEGS.

1. EAT TO GROW. "Always, always, always fuel yourself before and after your workouts! The point here is growing muscle and shaping your legs, and you can't do that without the fuel."

2. CARB UP. "I like to calculate my total carbohydrates for the day and make sure that I get about 25 percent more in my pre- and post-workout meals than I do in all my other non-training meals. Both my pre- and post-workout meals are high in carbs and protein and low in fat and fiber. My favorite pre/post carb choices are Rice Chex cereal, white rice or a bagel. All three are high in carbs and low in sugar, fiber and fat."

3. STRATEGIC SUGAR. "I try to put any of my higher sugar food items (fruit, granola, etc.) into the pre- and post-lift meals as well—your body will use them up!"

4. SAAVY SUPPS. "I recommend taking a pre-workout such as Uplift 15 minutes before workouts in order to improve endurance during the intense lifts and a branched-chain amino acid (BCAA) such as Her Aminos during your workout and immediately afterward in order to start the process of repairing your muscle. All the magic happens during recovery!"

KEEP UP WITH JESSIE

For more training and motivation from Jessie, check out her "Perfect Form" column at Fitnessrxwomen.com. For information on Jessie's Girls Programs and Training Camps, visit JessieFitness.com. You can follow her online on Instagram ([jesshilgenberg](https://www.instagram.com/jesshilgenberg)), YouTube ([jesshilgenberg](https://www.youtube.com/jesshilgenberg)), Facebook ([JessieFitness](https://www.facebook.com/JessieFitness)), Twitter ([jesshilgenberg](https://twitter.com/jesshilgenberg)) and Periscope ([jesshilgenberg](https://www.periscope.tv/jesshilgenberg)).

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HOUR GLASS WORKOUT

By Lisa Steuer

Photography by Ian Spanier

Styling by Elyse Blechman

Hair, Makeup by Carissa Ferreri

Clothing by Better Bodies

Footwear by Nike

Create
Sexy Curves By
Adding Shape to the
Shoulders, Legs and Butt

with IFBB Bikini Pro
COURTNEY KING

S

exy curves are a must-have for any time of the year, but it's a really great look to achieve for the upcoming holiday season! After all, a strong, shapely body goes perfect with fitted sweaters, holiday dresses and your favorite leggings. That's why we decided to bring you an effective total body hourglass workout to help tighten up your glutes, add shape to the shoulders and sculpt sexy legs— because who doesn't want to achieve the full package?!

To help us in this endeavor, we've enlisted the help of IFBB Bikini Pro Courtney King. "This is a great workout to achieve an hourglass figure because you are working different body parts and angles," said Courtney. "Full-body workouts are great and are something I like doing a lot in the gym. When I am short on time or feel like my body can handle working more than one body part, I'll perform this workout."

If you're ready to start sculpting a sexy hourglass figure, then come on — let's get started! »

THE HOURGLASS WORKOUT

Try performing this workout twice a week. Do four sets of 12 to 15 reps of each exercise. "You want to go until you start feeling a burn!" said Courtney.

Another option, said Courtney, is to perform four sets of 12, 15, 12, 10, eight reps (as the reps drop, your weight increases). "Start at a lighter weight, then work your way up to a heavier weight once you get comfortable with the movement of the exercise."

EXERCISE

REVERSE HACK SQUAT

HIP THRUSTS ON LEG CURL MACHINE

LYING HAMSTRING CURLS

REVERSE HYPEREXTENSION

CABLE KICKBACKS

WALKING LUNGES

PARTIAL + FULL LATERAL RAISES

DUMBBELL BENT-OVER LATERAL RAISES

ARNOLD DUMBBELL PRESS



GET IT RIGHT:

REVERSE HACK SQUAT

Get Set. Set up the machine with the desired weight. Position your chest flat against the pad and shoulders up against the shoulder pads, feet shoulder-width apart. Push up with your hands on the side handles, then slowly lower the weight down until your thighs are approximately positioned as right angles relative to your calves.

Courtney's Tip: "Push through your heels on the way up and squeeze at the top. If the weight is too heavy and is bothering your back, lower back down, drop the weight. Focus on the motion and time under tension of the exercise."



CHATting WITH COURT

COURTNEY SHARES SOME TRAINING SECRETS, WHERE SHE FINDS MOTIVATION, TIPS FOR A HEALTHY HOLIDAY, AND MORE!

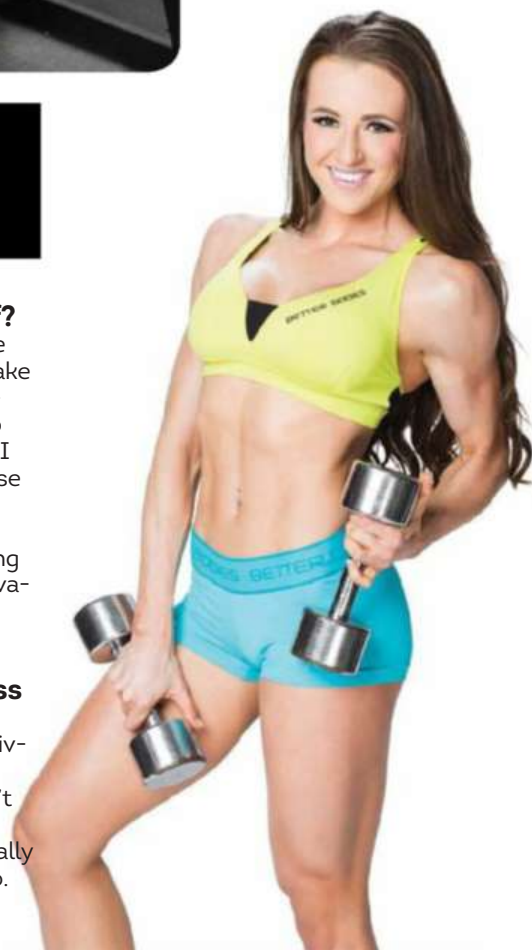
You seem to have a very positive attitude. Who or what inspires you? People who work for what they want inspire me— people who don't expect things handed to them but instead create their own opportunity for success! When you work hard for something and give it your all, the payoff is much greater! Individuals who have drive and work ethic are inspiring to me.

Do you have a life motto that you live by? "Happiness depends upon ourselves," (Aristotle). I believe we all create our OWN happiness; we cannot depend on things or other people to make us happy. Our happiness depends on us!

Do you ever have days where you just don't want to train?

How do you motivate yourself? One hundred percent I have days like this. I am human, and some days I wake up and just feel sluggish and unmotivated to hit the gym! If I am trying to get myself motivated to hit the gym, I will turn on some good music, because that always puts me in an uplifting mood. I also believe it's beneficial to work out with a buddy at times! Having a workout partner can be great motivation and is an awesome way to push yourself!

What are some keys to success that have helped you achieve your goals? Not listening to negativity or other people's opinions! If you have a goal or a dream, go for it. Don't let negative energy deter you from what you want to accomplish. You really can do anything you set your mind to.



What do you do when you are not competing/working out? I'm 22 years old and a college student. I go to school right now and enjoy always spending time with my family and friends. I also love to cook and get creative in the kitchen. You could call it quite therapeutic!

Do you have any tips for sticking to your workouts during the busy holiday season? Make time! I know with the holidays that spending time with your loved ones and running around can get quite hectic, but something is better than nothing. When you get to the gym, put on your headphones and get to business!

What are some of your favorite holiday traditions? Going to look at Christmas lights in downtown Chicago! I also love visiting my grandparents' house and spending time with my family. When I was younger, we always used to go on family vacations the day after Christmas. I haven't done a family vacation in a few years, but that always used to be a favorite tradition of mine.

What's your advice for women who want to get in shape like you? Don't think that getting in shape is something that happens overnight. Your body is a work of art and art takes time to build and create. I have many flaws and my body is far from perfect. I believe everyone is a work in progress, so being constant and having faith in yourself is the first step to getting the body you desire.

What were some of your favorite accomplishments/things you did in 2015?

My biggest accomplishment in 2015 probably has just been believing in myself and getting back onstage. It took a lot of work, but I never gave up on what my goal was.

What do you hope to accomplish in 2016? I would love to go on a mission trip in 2016. That has always been something I would love to do. As far as competing, I would be honored to be invited to compete on the Arnold stage once again and get to travel internationally for shows around the world!

“Don't let negative energy deter you from what you want to accomplish. You really can do anything you set your mind to.”

Courtney's Supplement Choice:
GNC Women's Ripped Vitapack®

HIP THRUST ON LEG CURL MACHINE



Get Set. Position yourself on the leg curl machine. Brace your core and forcefully extend the hips until the torso is parallel with the ground and a hip-neutral position is reached. Hold the contracted position for a moment, then return to the start position.

Courtney's Tip: “You're not going to get that big of a range of motion doing it on the leg curl machine versus a free weight hip thrust or Smith machine hip thrust. So when doing this, make sure you're really focusing on coming down nice and slow and squeezing and holding at the top. I like performing this exercise with my feet wider apart and toes slightly pointed out to hit my outer glute!”
»





LYING HAMSTRING CURL

Get Set. Begin by lying facedown on a lying leg curl machine, with your legs underneath the roller pads. Keeping your thighs pressed to the machine's surface, slowly curl your feet upward, stopping just short of touching your butt or as far as comfortably possible. Contract your hamstrings and then reverse direction, returning back to the start position.

Courtney's Tip: "When I do a lying hamstring curl, I always focus on the tension and movement of the exercise. So instead of getting on the machine and going really fast up and down, focus on coming up at the top, driving your hips into the bench, and coming down nice and slow."



REVERSE HYPEREXTENSION

Get Set. Lying facedown on the reverse hyperextension machine, raise legs as high as possible until nearly straight before slowly lowering legs to original position.

Courtney's Tip: "I LOVE this exercise! When you are doing this exercise, slightly round your back (like a hunch). It will put less stress on your lower back and really will make those hamstrings and glutes get a good burn!"



CABLE KICKBACKS

Get Set. Attach ankle strap from the cable machine. Stand facing the machine with knees bent, grabbing the machine frame for support. Kick your leg back as far as you can without arching your back, and concentrate on squeezing your butt muscles as you extend your hip.

Courtney's Tip: "This exercise can be done with an exercise band if a cable is not handy. With the proper amount of weight to not strain your lower back and full extension of the leg, you will get results. I also like to switch it up and perform this exercise at times with my foot pointed outward to hit my lateral glute. This is definitely one of my favorite exercises for the booty!"



WALKING LUNGE

Get Set. With barbell on back, step forward with your left leg and try to touch the ground with your right knee. Make sure to keep your left knee behind the ankle. Then, repeat with the other leg.

Courtney's Tip: "It's easy for your quad to take over when doing a walking lunge. Always remember to push through your heel on the way up and pause for a second at the top. To prevent injury, don't let your knee come over your toe. You should come down at a 90-degree angle and then push back up."



PARTIAL + FULL LATERAL RAISE

Get Set. Hold dumbbells at your side, and then raise arms to your side to about 45 degrees. Slowly lower and perform second rep at 90 degrees.

Courtney's Tip: "Of course we want to challenge ourselves, but keep the weight comfortable so you can perform the exercise correctly. You don't want to be 'swinging' your body trying to get up the weight. You will feel this all in your shoulders and trust me, even with five pounds you will be able to really burn out with this 45-degree and 90-degree lateral movement!" »





DUMBBELL BENT-OVER LATERAL RAISE

Get Set. Bend forward from the waist and let dumbbells hang straight down from your shoulders with palms facing in. Maintaining the bent-over position, lift the dumbbells out to the side until the weights are in line with your shoulders. Slowly lower the weights and repeat.

Courtney's Tip: "This exercise can also be performed with cables or sitting. When doing this movement, make sure your torso is forward and stationary, and the arms are straight with a slight bend at the elbows. Lift the dumbbells straight to the side until both arms are parallel to the floor and until you feel the tension in your rear delt."

ARNOLD DUMBBELL PRESS

Get Set. Grasp two dumbbells and bring the weights to shoulder level with your palms facing toward your body. Press the dumbbells directly upward over your head, simultaneously rotating your hands so that your palms face forward during the last portion of the movement. Slowly return them along the same arc, rotating your hands back to the start position.

Courtney's Tip: "This is a different motion than your regular shoulder press. This exercise is targeted on both the front and side area shoulders. I love doing drop sets with the Arnold dumbbell press. I will start heavy (with about five to six reps) and then drop down to about half the weight immediately after and get 10 to 12 reps."



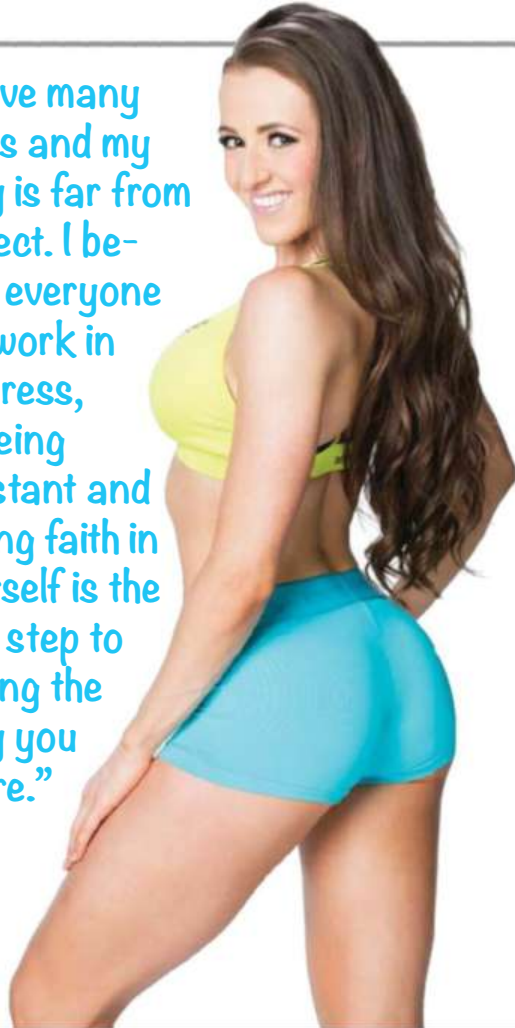
STAIRMASTER INTERVALS

IN ADDITION TO WEIGHT TRAINING, COURTNEY LIKES TO DO CARDIO AND INTERVAL TRAINING AT LEAST FOUR TIMES A WEEK, SO GIVE COURTNEY'S STAIRMASTER A WORKOUT A TRY TO REALLY INCREASE THE FAT BURN. REPEAT THIS WORKOUT TWICE AND IT SHOULD TAKE YOU ABOUT 25 MINUTES— ALWAYS WARM UP WITH FIVE TO 10 MINUTES OF WALKING BEFORE YOU START.

- 2 MINUTES ON LEVEL 8
- JUMP OFF AND DO 20 BURPEES
- 2 MINUTES ON LEVEL 10
- 2 MINUTES ON LEVEL 12
- JUMP OFF AND DO 20 POP SQUATS
- 1 MINUTE SKIPPING STEPS (LEVEL OF CHOICE)
- 2 MINUTES, LEVEL 10
- 1 MINUTE TO 45 SECONDS, LEVEL 15 AND UP (TRY NOT TO HOLD ON AND GO AS FAST AS YOU CAN!)



"I have many flaws and my body is far from perfect. I believe everyone is a work in progress, so being constant and having faith in yourself is the first step to getting the body you desire."



KEEP UP WITH COURTNEY

Courtney is a GNC sponsored athlete. Follow her on Facebook (IFBB Pro Courtney King) on Twitter (@CourtneyKingg) and Instagram (@courtneyking). Courtney can be contacted for appearances through www.fmg-fitnessmanagement-group.com. ■



HEALTHY HOLIDAY COOKIES

For Courtney's own guilt-free chocolate chip cookie recipe, visit www.fitnessrxwomen.com/holidaycookies.

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BANDS & BODYWEIGHT BOOTY Workout

By **JAIME BAIRD**

Photography by **IAN SPANIER**

We love the holidays: family time...fun festivities...all the fa la la las. BUT, we don't love what the holidays do to our butts. Between long car rides, cross country flights, lots of sitting around the dinner table and missed gym sessions, our perky pumpkin backsides can flatten out like those extra slices of bread we ate.

Because none of us want the "bleg" phenomenon (where your butt just runs right into the back of your leg), let's make butt-shaping a priority with an on-the-go glutes program from IFBB Bikini Pro Stephanie Mahoe. She shares two effective workouts using just your bodyweight and bands. Having transformed what she refers to as her "pancake butt" into a shapely, tight pro bikini booty, she has lots to share to help our cause. »

Build Your Backside Anywhere, Anytime



with IFBB Bikini Pro Stephanie Mahoe

STANDING BENT-OVER KICKBACKS

Secure a band with handles around a stable structure. Position a handle over one foot, lean forward and place your hands on a box (or something of similar height) for balance. There should be tension in the band in the starting position. Drive the foot back and up, feeling a contraction in the glute.

Stephanie says: *"Keep your core tight throughout the movement."*

Hair and Makeup by CARISSA FERRERI
Styling by ELYSE BLECHMAN
Clothing: Better Bodies, Footwear: NIKE

BEHIND THE WORKOUT

Stephanie shares her thinking behind the workout design as well as some of her top tips for successful glute training.

TIME UNDER TENSION. “I like to use 15 to 20 reps for most band exercises. The higher rep/higher volume helps create incredible amounts of tension in the glutes. I aim to force as much blood as I can into the muscle (the pump) and maintain it as long as possible.”

FIRE ‘EM UP. “I always start with an exercise that will really get my muscles firing. Bridge movements create the most glute activation, so I always position them at the start of my session. Bridges also help activate my core so that it stays engaged throughout the remainder of my workout. Once my glutes are warmed up, I will move into targeting each area of the glute: medius, maximus and minimus.”

MIND-BOOTY CONNECTION. “I am a firm believer in establishing a good mind-muscle connection during an exercise. This is important for maximizing the contraction.”

HEAVY ISN'T ALWAYS BETTER.

“One of the mistakes I’ve made was thinking that HEAVIER was always better when it came to booty building. Although my body did respond well to that type of stimulation, it is still possible to build muscle in your glutes using lighter weights. I enjoy lifting heavier, but when I reduce the weight, I can achieve a much better contraction.”

BAND-AID. “Bands are an effective and convenient way to train the glutes. I love that they are lightweight and portable. They are perfect for traveling and can easily be used to get a good workout in a hotel room or incorporated into your routine at the gym. Bands produce an incredible amount of tension in the muscle, which is a form of metabolic stress and helps a muscle to grow. I personally like to use SPRI bands.”

THE WORKOUTS

- DON'T RUSH THROUGH THE MOVEMENTS. MAKE SURE TO FEEL THE GLUTES WORKING.
- HOLD THE CONTRACTIONS FOR A FEW COUNTS TO INCREASE TIME UNDER TENSION.
- NO REST BETWEEN LEGS FOR UNILATERAL EXERCISES.
- MINIMIZE REST BETWEEN SETS TO KEEP THE INTENSITY HIGH.

PROGRAM 1: BEGINNER/INTERMEDIATE

WARM-UP – FLOOR BRIDGE: 2 X 15-20 REPS

BAND QUADRUPLED HIP EXTENSION: 3 X 20 REPS, EACH LEG

SHOULDER ELEVATED SINGLE-LEG HIP THRUST: 3 X 20 REPS, EACH LEG

LATERAL ABDUCTION WALK: 3 X 15 REPS, EACH WAY

SINGLE-LEG FLOOR BRIDGE: 3 X 15 REPS, EACH LEG

STANDING BENT-OVER KICKBACKS: 3 X 20 REPS, EACH LEG

DOUBLE BAND SQUAT: 2 X 30 REPS

PROGRAM 2: ADVANCED

WARM-UP – FLOOR BRIDGE: 2 X 15-20 REPS

LATERAL ABDUCTION WALK: 4 X 10-12 STEPS, EACH SIDE, SUPERSET WITH STANDING STRAIGHT-UP KICKBACKS: 4 X 20 REPS, EACH LEG

STIFF-LEG DEADLIFT: 4 X 20 REPS, SUPERSET WITH BETWEEN TWO BENCHES SINGLE-LEG HIP THRUST: 4 X 15 REPS, EACH LEG

QUADRUPLED HIP EXTENSION: 4 X 20 REPS, SUPERSET WITH SUPERMAN: 4 X 20 REPS

FOOT ELEVATED SINGLE-LEG HIP THRUST: 4 X 15 REPS, EACH SIDE

DOUBLE BAND SQUAT: 2 X 30 REPS

Get it RIGHT

LATERAL ABDUCTION WALK

With the band above your knees, stand in a partial squat with your legs about shoulder width (or the width where you start feeling tension in the band). Take a step to the side and then move the other foot in just a bit so that feet are back to the beginning width. Repeat all reps in one direction and then switch to the other side.

Stephanie says: “Do not let your knees cave inward during the exercise—keep them pointed forward and lined up over your feet with toes facing forward.”



Get To Know Steph

Stephanie shares her tips for busy moms, overcoming low motivation, social media and more!

FITRX: In addition to being a top IFBB athlete, you work full time for Bombshell Fitness and are raising a son on your own. How do you manage to do it all?

STEPHANIE: Prioritizing and lists! I always plan my day in advance and brainstorm where I will fit each task. I usually have a list for the day and a list of things that need to get done but are not urgent. The best tip I have is to allow yourself grace. I remind myself that it will all get done and getting anxious will only make it harder to accomplish everything. Also, juggle strategically and find creative ways to involve your kids in errands and chores.

FITRX: As the Social Media Manager for Bombshell Fitness, you know a thing or two about a great post. Any tips

for our readers?

STEPHANIE: If you are using social media for self-promotion, then the best advice I can share is to view yourself as a brand and post accordingly to the image you want to be known for. View your social media as your resume and make your posts accordingly. People want to interact, so a good post needs to capture the attention of your target audience and get them engaged. Videos are always great!

FITRX: Is there a motto you live by?

STEPHANIE: Be in a constant pursuit of the best version of yourself. I refuse to settle for mediocrity. When I decide to do something, I pour my heart into ensuring that something, whatever it may be, is a success. I hold myself to a high standard. To me, this means being a good person with good character, first and foremost. It means being loyal, humble, kind and hardworking.

FITRX: What is your best advice for women who want to get in shape like you? (Cont. on last page of this feature).

STANDING STRAIGHT-UP

KICKBACKS: With the band above your knees, kick one foot back and squeeze the glute hard. Lower the leg about halfway, keeping tension in glute, and then raise it back up. Complete all reps on one side before switching to the other.

Stephanie says: "This exercise should have a very small range of motion, but don't rush through these. Go slow and keep each movement controlled. Focus on every contraction."



STIFF-LEG DEADLIFT:

Secure a band with handles around a stable structure. Grab the handle with both hands and take a few steps back to stretch the band tight. Keeping a slight bend in the knee, hinge forward at the hips. Then, squeeze the glutes as you bring your hips forward to return to the starting position. »





◀ **DOUBLE BAND SQUAT:** With bands around the ankles and above the knees, perform a squat.

Stephanie says: "Don't let your knees cave inwards. Think about trying to push your knees against the band as you perform this exercise."



QUADRUPLED HIP EXTENSION: Start on your hands and knees. Keeping the knee bent, drive the heel up to the sky.

Stephanie says: "Do not drop down onto your forearms. Keeping your spine neutral will allow better glute activation."



SUPERMAN: Lie facedown on the ground with arms extended above head. Lift arms and legs off the ground by contracting the glutes and back. Lower down without completely releasing to the ground.

Stephanie says: "Squeeze and hold each contraction for two to three seconds."



BAND QUADRUPLED HIP EXTENSION: Secure a band with handles around a stable structure. Start on your hands and knees with the handle over one foot. Keeping the knee bent, drive the heel back and up.



FLOOR BRIDGE: Lying on your back, position your feet flat about hip width. Extend your hips up, squeezing the glutes hard at the top.

Stephanie says: "Vary your foot placement to find where you feel your glutes the most."



SINGLE LEG FLOOR BRIDGE: Lying on your back, position your feet flat about hip width. Lift one leg up. Keeping the hips stable and aligned, extend your hips up as high as you can squeezing the glutes hard at the top.

Stephanie says: "Drive through your heel to maximize glute and hamstring activity."



“Be in a constant pursuit of the best version of yourself.”

SINGLE-LEG ELEVATED HIP THRUST: Place the heel of one foot on a bench and extend the other leg straight up. Press into the heel positioned on the bench and raise your hips as far off the ground as you can.

Stephanie says: "Squeeze and hold each contraction for two to three seconds."

“

Never fear change or stepping out of your comfort zone—this is where progress is made and lessons are learned.”

”



SHOULDER ELEVATED SINGLE-LEG HIP THRUST:

Begin seated on the ground leaning against a bench. Lift your hips off of the ground and position feet such that your shins are perpendicular to the floor at full extension. Lift up one leg. Pressing through the heel of the grounded leg, thrust your hips up vertically.

Stephanie says: "At the top of the movement, your torso should be parallel to the floor."



BETWEEN TWO BENCHES SINGLE-LEG HIP THRUST: Between two parallel benches, position your body with your shoulder blades resting on one and heels on the other. Allow your glutes to hang toward the floor to start, then drive through your heels to extend your hips up. Contract the glutes hard at the top.

STEPHANIE: Achieving your goals can be hard and takes work. You will have setbacks. There will be tears and moments of frustration. Stay focused. Be persistent. Never be afraid to ask for help. Never fear the unknown. Anything can happen. The unknown is a place that you can create. Never stop dreaming. Never stop believing. Never fear change or stepping out of your comfort zone—this is where progress is made and lessons are learned. But above all, keep hope alive and never ever quit.

FITRX: I know you are extremely focused and committed to your goals. What do you do on those low motivation days?

STEPHANIE: If it makes sense in my training split, I will sometimes use this as a cue that it's time for a rest day. On the really tough days when I have to train, I focus on getting myself to the gym. Sometimes we just need to move and get some blood flowing until the motivation kicks in. Sometimes it doesn't kick in, but I go through the motions. It's not ideal, but it still gets the job done. You can't train only on the days that you feel good. When you are committed to a goal, it is important to embrace these low motivation days. They WILL happen and when they do, it is OK. It's part of the journey. I remind myself of this and ride it out. There is always a new day ahead!



STEPHANIE'S PROFILE

2 x IFBB Bikini Champion

Prime Nutrition & Celestial Bodiez athlete

Born in Honolulu

Social Media Manager, Bombshell Fitness

33 years old ■

WHAT SUPP?

Stephanie shares her must-have booty-building supplements.

PRE-WORKOUT: "I love my **MAX-HP** from Prime Nutrition. It gives me the mental edge and energy boost needed for my most intense training sessions."

INTRA-WORKOUT: "I found great success with using **INTRA-MD** from Prime Nutrition during my prep for the Arnold Classic. This fast-absorbing carb source gets shuttled into the muscle quickly, which helps promote growth as well as recovery. It helps get those booty pumps that every girl tries to achieve."

POST-WORKOUT: "To help recovery, I take glutamine after every workout and before bed with my **SLEEP/GH**. They are both part of a supplement stack I designed (Steph's Athletic Arsenal) and can be purchased at www.primenutrition.com."

MORE FROM STEPHANIE

For more from Stephanie, keep up with her online on Facebook, Twitter (@stephmahoe) and Instagram (@stephmahoe). Stephanie can be contacted for appearances through www.fmg-fitnessmanagementgroup.com.





Styling by ELYSE BLECHMAN
Training apparel from BETTER BODIES
Makeup and hair by CARISSA FERRERI

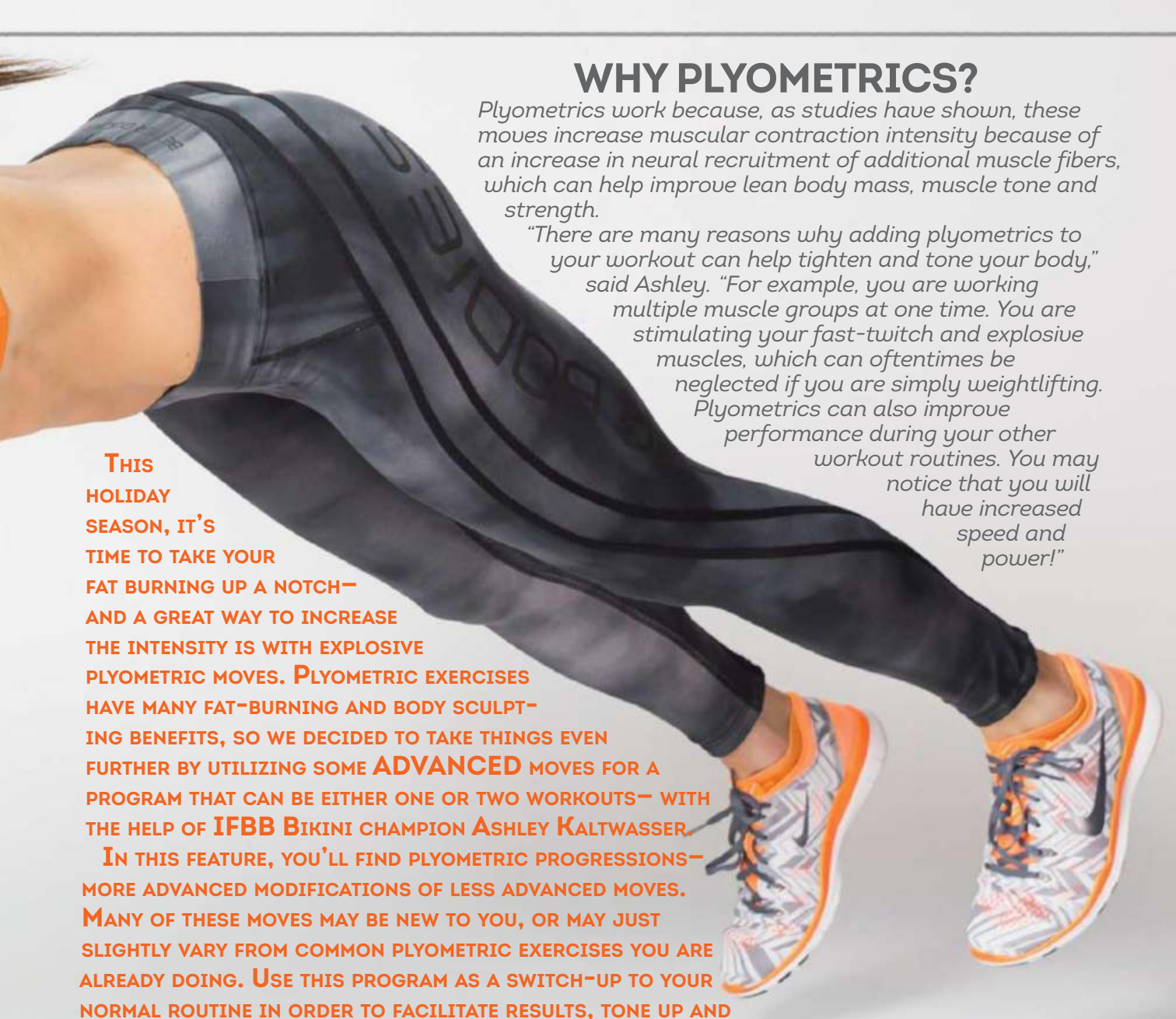
By **LISA STEUER**
Photography by **IAN SPANIER**

Plyometric

WHY PLYOMETRICS?

Plyometrics work because, as studies have shown, these moves increase muscular contraction intensity because of an increase in neural recruitment of additional muscle fibers, which can help improve lean body mass, muscle tone and strength.

"There are many reasons why adding plyometrics to your workout can help tighten and tone your body," said Ashley. "For example, you are working multiple muscle groups at one time. You are stimulating your fast-twitch and explosive muscles, which can oftentimes be neglected if you are simply weightlifting. Plyometrics can also improve performance during your other workout routines. You may notice that you will have increased speed and power!"



THIS HOLIDAY SEASON, IT'S TIME TO TAKE YOUR FAT BURNING UP A NOTCH—AND A GREAT WAY TO INCREASE THE INTENSITY IS WITH EXPLOSIVE PLYOMETRIC MOVES. PLYOMETRIC EXERCISES HAVE MANY FAT-BURNING AND BODY SCULPTING BENEFITS, SO WE DECIDED TO TAKE THINGS EVEN FURTHER BY UTILIZING SOME ADVANCED MOVES FOR A PROGRAM THAT CAN BE EITHER ONE OR TWO WORKOUTS— WITH THE HELP OF IFBB BIKINI CHAMPION ASHLEY KALTWASSER.

IN THIS FEATURE, YOU'LL FIND PLYOMETRIC PROGRESSIONS— MORE ADVANCED MODIFICATIONS OF LESS ADVANCED MOVES. MANY OF THESE MOVES MAY BE NEW TO YOU, OR MAY JUST SLIGHTLY VARY FROM COMMON PLYOMETRIC EXERCISES YOU ARE ALREADY DOING. USE THIS PROGRAM AS A SWITCH-UP TO YOUR NORMAL ROUTINE IN ORDER TO FACILITATE RESULTS, TONE UP AND BLAST FAT ALL AT ONCE—AND FAST! >>

**INCREASE FAT BURN &
INTENSITY WITH THESE
ADVANCED CIRCUIT WORKOUTS**

Progressions

WITH IFBB BIKINI PRO **ASHLEY KALTWASSER**

THE WORKOUT

This is an advanced program, so you can perform it twice a week. Not only is this workout great for switching up your routine, but the constant explosiveness will get your heart rate up fast and provide a quick and effective workout—which is especially perfect for the busy holiday season.

This program is broken up into two circuits that can be done on separate days. But if you really want to burn off some extra holiday calories, you can perform them back to back.

Perform each exercise for 30 seconds, before moving onto the next exercise. Rest for 30 seconds after completing all the exercises. Repeat circuit five times.

EXERCISE

CIRCUIT A:

180 JUMP SQUAT

HORIZONTAL JUMP TO TUCK JUMP

REVERSE BURPEE

EXPLOSIVE PUSH-UP

CIRCUIT B:

DIVE BOMBER PUSH-UP

REVERSE LUNGE KNEE-UP JUMP

PLANK TO LOW SQUAT

BENCH HOP-OVER

GET IT RIGHT

180 JUMP SQUAT (MODIFICATION OF THE STATIONARY JUMP SQUAT).

Lower into a squat, then jump into the air and turn 180 degrees in the air so that you land in the opposite direction in a squat. After landing in squat, jump back to original position and repeat.

HORIZONTAL JUMP TO TUCK JUMP (MODIFICATION OF THE STATIONARY TUCK JUMP).

Stand with both feet together. Bend the knees slightly and jump as far as possible to one side. Upon landing, immediately perform a tuck jump. Repeat in the opposite direction with no pausing between reps.

REVERSE BURPEE (MODIFICATION OF THE REGULAR BURPEE AND/OR CRUNCH).

Stand with arms extended overhead. Bend your knees and lower your butt to the floor in a controlled motion. Roll onto your back and bring your knees toward your face. Use your momentum to roll back forward, land on your feet and then stand, performing an explosive jump, and repeat.

EXPLOSIVE PUSH-UP (MODIFICATION OF THE REGULAR PUSH-UP).

Get into a push-up position. Lower chest to the floor and then explosively push up so that both your hands and feet come off the ground. Land back onto the ground and go into the next position.

180 JUMP SQUAT



You need to envision a plan, write it down and stick to it! Think small, realistic goals and work toward bigger ones.

Ashley's SUPPLEMENT STACK

AMINOLAST
CARNIPURE
MYOFUSION ADVANCED
PROTEIN POWDER
SP250

DIVE BOMBER PUSH-UP (MODIFICATION OF THE REGULAR PUSH-UP/PIKE PUSH-UP FOR SHOULDERS).

Start with your hands and feet on the floor and your hips raised so that you form a "V" with your body. Hands should be just slightly more than shoulder-width apart. Lower your head toward the ground and then bring your chest forward between your hands and up toward the ceiling. Then bring your hips back toward the ceiling to get back to the starting position, and repeat.

REVERSE LUNGE KNEE-UP JUMP (MODIFICATION OF THE REVERSE LUNGE).

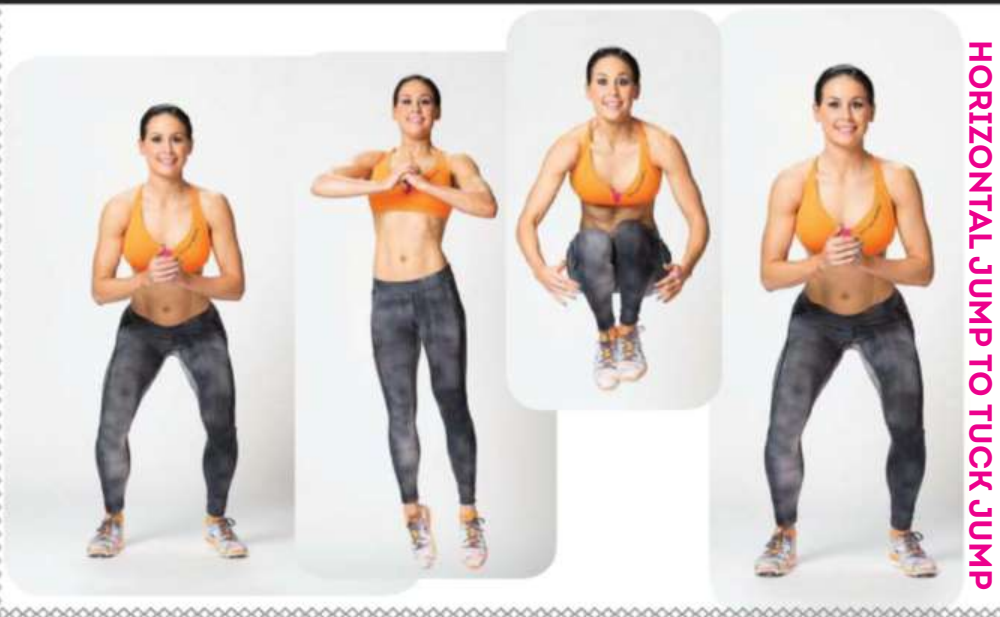
Step one foot backwards into a reverse lunge. Powerfully push through the front foot and bring the opposite knee toward the chest and jump up. Quickly step back into a reverse lunge and repeat.

PLANK TO LOW SQUAT (MODIFICATION OF THE PLANK AND/OR BURPEE).

Get into a plank position with feet hip-width apart. Jump feet forward, landing in a squat, then jump back out to the plank position.

BENCH HOP-OVER (MODIFICATION OF BENCH SKIPS).

Begin with your hands on the bench while standing on one side. With a firm grip on the bench, push off the ground with both legs at the same time, hopping over the bench to the other side. Push back and repeat.



HORIZONTAL JUMP TO TUCK JUMP



REVERSE BURPEE



Surround yourself with positive, like-minded people who will help you stay on track. Oftentimes, group support is just what you need for that extra push.

EXPLOSIVE PUSH-UP



DIVE BOMBER PUSH-UP



QUICK CHAT

FRx: During this time of the year, it can be difficult to eat healthy. Do you have a few tips for sticking to a healthy diet during the holiday season?

ASHLEY: Make sure that you are consuming enough water. Often, we confuse hydration with cravings or hunger. I know it can be difficult to drink water in the cold weather, but just keep in mind that just because it's not hot out, it doesn't mean you can't become dehydrated.

FRx: Do you have a favorite healthy recipe?

ASHLEY: I love making sugar-free Jell-O, adding in fat-free Cool Whip. It's ultra low calorie and it's fun to get creative by layering all of the different colors and flavors!

FRx: What are some of your tips for sticking to your workouts during the busy holiday season?

ASHLEY: Get it done first! I like to do my workout first thing in the morning so I can get it out of the way. Not only does it wake me up, but I also have more energy throughout the entire day. Starting the day off right really just sets me up for an ultra productive day full of healthy choices.

FRx: What are some of your favorite holiday traditions?

ASHLEY: I love to bake decorated sugar cookies and give them away to my friends and family... and well— maybe I will keep one or two for myself to eat as well

FRx: Can you give some advice for women who want to get in shape like you?

ASHLEY: Stay consistent and never give up! Rome wasn't built in a day. You need to envision a plan, write it down and stick to it! Think small, realistic goals and work toward bigger ones.

FRx: Can you give some advice to help people stick to their fitness new year's resolutions in 2016?

ASHLEY: Surround yourself with positive, like-minded people who will help you stay on track. Oftentimes, group support is just what you need for that extra push. It can be hard to do it on your own!

FRx: What do you hope to accomplish in 2016?

ASHLEY: In 2016 I would love to be in more print work. I think it's a side of the fitness industry that I need to get more involved with. I hope to book quite a few photo shoots this year! Stay tuned!

Check out Ashley's "Keep it Fresh" column at FitnessRxWomen.com for her fun and flavorful fit living tips. You can also find her on Facebook (/Bikini-ProAshley), Twitter (@AshleyKFit) and Instagram (AshleyKfit). Ashley's sponsors include Gaspari Nutrition, MuscleEgg, Better Bodies, Fuel Meals, Rain Cosmetics and CJ's Elite Competition Wear.

Ashley can be contacted for appearances through www.fmg-fitnessmanagementgroup.com.

PRE- AND POST-WORKOUT NUTRITION

Ashley shares her favorite pre- and post-workout meals to help increase energy and results.

PRE-WORKOUT: "I LIKE TO KEEP THE PRE-WORKOUT MEAL LIGHT— ONE CUP EGG WHITES/VEGGIES AND ONE HALF OF GRAPEFRUIT."

POST-WORKOUT: QUICK CARBS AND FAST ABSORBING PROTEIN— ONE-FOURTH CUP (OR 1 SERVING SIZE) COOKED CREAM OF RICE WITH ONE SCOOP GASPARI MYOFUSION ADVANCED PROTEIN POWDER (BE SURE TO ADD IN PROTEIN AFTER THE CREAM OF RICE HAS BEEN COOKED AND SLIGHTLY COOLED)." ■

REVERSE LUNGE KNEE-UP JUMP



PLANK TO LOW SQUAT



BENCH HOP-OVER





6 TIPS for EATING CLEAN DURING the HOLIDAYS

Plus: Ordering Smart at Restaurants

I won't deny it. It IS difficult. Late nights, desserts, parties, drinking— the holidays are just around the corner, and most would agree that this time of year is the most challenging when it comes to eating clean and working out consistently. This year, I challenge you to get a head start instead of giving yourself excuses to indulge.

I love parties and getting together with my friends and family. However, almost every time I do, there are food and drinks involved. When I first began eating natural, whole, clean foods, I would get hassled about it all the time. “Oh come on, just have one bite! It isn't going to hurt,” “You worked out today, so you can afford to eat what you want,” etc. I still occasionally get a sly comment for not having dessert or a mixed drink, but over the years people just don't bother me about it anymore. Usually, those who give you a hard time are the ones who have yet to find the willpower to reach their goals. Overeating and drinking doesn't seem so bad when you have someone else to do it with. Don't get me wrong, there are times I will have a glass of wine or a slice of cake— I am not perfect! But a majority of the time, I just politely decline and I always feel better afterwards. The next day I feel that much farther ahead.

Getting a lean shape takes hard work and sacrifice. It is one of the things in life that you have to work at day in and day out because it doesn't come easy. There is no magic concoction that will help you lose weight or gain lean muscle. The key is consistency. If you are not consistent— eat well for a week, then eat bad the whole weekend— you will stay exactly as you are. Staying strong when you are tempted will take you that much closer to reaching your goal— I promise.

Here are some fit tips to help you stay clean during the holiday season:

- 1. Be the host.** It is easy to prepare the processed box foods that are so readily available, but how about taking the time to prepare whole, natural foods yourself to make your meal a bit more special and healthier for yourself and your loved ones? This way, you know what is going into each dish.
- 2. Keep your meal simple.** Try roasted Brussels sprouts with a bit of honey or a salad with cranberries and walnuts. Keep it fresh and minimize your prep time.
- 3. Include unrefined whole grains on the menu.** Try switching out white rice for brown or white bread for whole wheat. By doing this, you increase the amount of vitamins, minerals and fiber to your meal.
- 4. Use a smaller plate, only go up once and eat slowly.** Fill up on the salad and steamed vegetables!
- 5. Avoid creamy sauces and drinks (eggnog).** Instead, drink flavored teas (hot or iced). Create your own fruity blends like cranberry apple or cinnamon. If you are a wine drinker, add a bit of sparkling water for a low-calorie fizzy option.
- 6. Be sure not to skip meals the day of the party or dinner.** Make sure you work out in the morning to give yourself a great start to the day!

What to Order At Restaurants

During the holidays, you may be dining out more often. Remember to be health conscious and ask for substitutions if necessary. It is easy to stay on track even when you are not cooking at home (although that is preferred). When I dine out with friends, these are some of the things I order at the following restaurants:

OUTBACK STEAKHOUSE

Atlantic Salmon and Fresh Seasonal Veggies (no seasoning and no butter)

408.3 calories, 21.6 g fat, 11.3 carbs, 41.4 g protein

P.F. CHANG'S

Ginger Chicken with Broccoli

Per serving: 273 calories, 4 g fat, 11 carbs, 28 g protein

Add brown rice instead of white and ask for no sauce to save calories, grams of sugar and to reduce the amount of sodium.

APPLEBEE'S

Asian Crunch Salad (ask for no dressing)

Per salad: Fewer than 550 calories and even less than that without the dressing.

STARBUCKS

Grande Caffè Americano (no cream or sugar)

20 calories, 3 g carbs, 0 g fat, 1 g protein

THE CHEESECAKE FACTORY

Fresh Grilled Mahi Mahi

Per entree (not including sides): 466 calories, 13 g fat, 0 g carbs, 42 g protein

Choose your sides, but remember to ask for no butter, oil, seasonings, etc.

Until next time, keep living the Fit Life!

Visit www.nicolewilkins.com for full-length workout videos, recipes, meal plans and much more— including Nicole's NEW clothing line! For more information and 2015 locations for PHAT Fitness Camps for women of all ages and athletic abilities hosted by Nicole Wilkins, check out www.getthatwithnicole.com!

Nicole Wilkins is three-time Figure International and four-time Figure Olympia champion, as well as a Met-Rx sponsored athlete and certified personal trainer. For more with Nicole, check out “The Fit Life” series on www.fitnessrxwomen.com. You can also follow Nicole on Facebook, and Twitter: @NicoleWilkins.



I'M DESPERATE TO BREAK THE CYCLE. I ALWAYS START WORKING OUT AND EATING RIGHT WITH THE BEST OF INTENTIONS ONLY TO FIZZLE OUT IN A MONTH, SOMETIMES EVEN A FEW WEEKS. WHAT CAN I DO TO STOP THIS? I KNOW THAT I NEED TO LOSE WEIGHT AND THAT I'LL BE HAPPIER IF I DO, BUT I JUST CAN'T SEEM TO STICK WITH IT. HELP!

First and foremost, know that you are not alone. At the start of a new year, which is quickly approaching, many people start off with a bang, only to fall off before February, and sadly it happens to people again and again throughout the year. One very common issue is not having a clear plan with a clear goal. Going to the gym and simply winging it is no way to maintain commitment. You need a clear goal (lose 20 pounds, gain muscle, etc.) and a realistic plan for execution. Realistic, meaning—how many days can you really and truly commit to exercising or making it to the gym? Don't plan for five days a week when the likelihood is really only three. Consistency is paramount to success.

Also, consider partnering up with someone or hiring a trainer for accountability. Having someone push, challenge and encourage you may be just what you need. Another common issue I see is doing too much too soon. Don't jump in and push the heaviest weight or run the farthest you can go, because you'll end up sore and miserable for days. Prolonged soreness will often keep someone out of the gym just long enough to halt progress. Take an approach where you gently ramp it up.

In addition, be prepared with your nutrition plan. Set your home environment up for success and do some meal prep. With only a few days and weeks into a plan, it will be super tempting to revert back to old habits and patterns. Again, it takes time and consistency to replace old poor habits with new good ones.

Finally, don't give up at the first, second or third slip-up. It can and does happen to even the most disciplined. You only fail when you mess up and truly give up. Refuse to do that and get right back on track. A fitness journey is never a straight line.

I'M 17 AND ACTUALLY CHANGED MY LIFE, LOSING 36 POUNDS FOLLOWING YOUR LIVEFIT TRAINER, SO THANK YOU! I AM GRATEFUL FOR HOW MUCH YOU'VE HELPED ME, BUT NOW I NEED YOUR HELP ONCE AGAIN. MY PARENTS GOT ON BOARD DURING MY WEIGHT-LOSS JOURNEY, HELPING ME KEEP THE FOODS THAT I NEEDED IN THE HOUSE, BUT THEY ARE FEEDING MY YOUNGER BROTHER AND SISTER SO MUCH JUNK THAT THEY ARE STARTING TO BECOME OVERWEIGHT. HOW CAN I GET MY PARENTS TO REALIZE THAT THEY ARE SETTING THEM UP FOR A HARD ROAD? I WAS MISERABLE WHEN I WAS OVERWEIGHT AND DON'T WANT MY BROTHER AND SISTER TO HAVE THE SAME EXPERIENCE.

I am so proud of you for making the commitment to change your life and get healthy! I am not sure that I would have had the same discipline at 17. You are a remarkable young lady and I think it's great that you want to help your brother and sister avoid the fate of being overweight.

Offer to do as much grocery shopping and cooking as you possibly can for your parents. Find out some of their favorite unhealthy foods and research ways to make them healthier. Continue to model healthy eating through your own behaviors and try to avoid making weight gain and food choices a constant topic of conversation. Help the kids maintain a carefree attitude about food and emphasize what is good for them more than negative talk about what is bad. Also, do what you can to help them get at least an hour of exercise each day. With so much technology and TV, many kids aren't getting nearly enough exercise. You can disguise the exercise as play with things like, tag, jump rope, riding bicycles, roller blading, etc. I'm sure the kids will enjoy spending time with their big sister and hopefully day by day, your healthy habits will start to rub off. Keep it up! Your good habits will help set them up for a lifetime of good health and happiness. There is really no greater gift!

HOW MUCH SHOULD I EAT BEFORE I GO TO THE GYM IF I PLAN TO LIFT WEIGHTS AND DO CARDIO? I USUALLY AVOID EATING TO TRY TO BURN THE MOST CALORIES, BUT I'M HEARING THAT NO FOOD COULD ACTUALLY HURT MY PROGRESS.

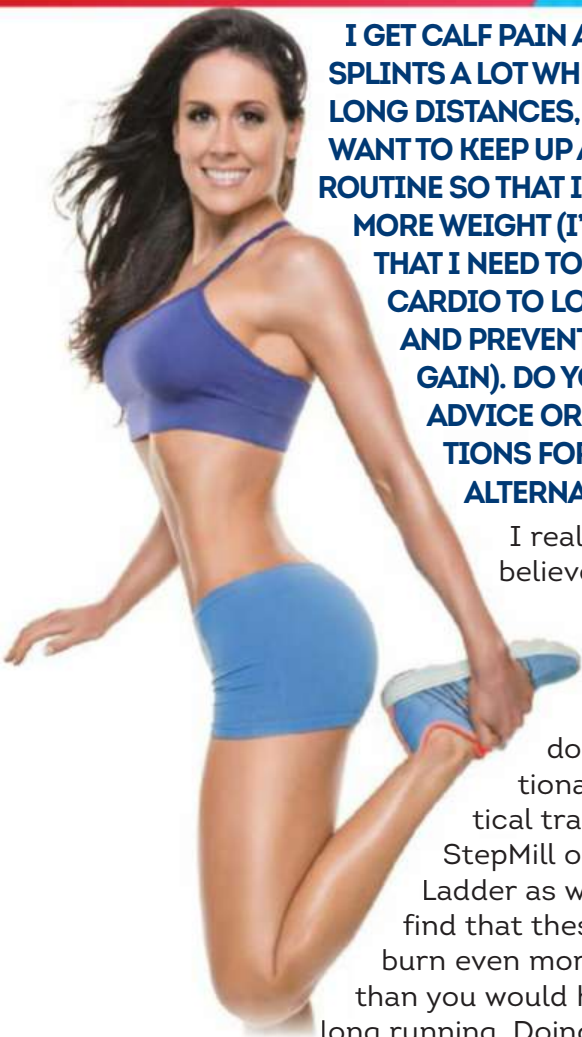
Exercising on an empty stomach can lead to catabolism, or a breakdown of muscle tissue. Though the number on the scale may drop, losing muscle is not ideal because it can negatively impact your metabolism (slowing it down). Conversely, it is not a good idea to work out on a full stomach. This can cause cramping, and you want blood in your working muscles, not pooled in your stomach for digestion. If possible, eat a full and balanced meal of lean protein, complex carbohydrates, vegetables and a bit of healthy fats at least two to three hours before a workout. If, however, you find yourself hungry an hour or less before your workout, choose a quick-digesting carbohydrate like a small apple. It will give you a quick boost of energy to help you power through your workout. ■



Have a question for Jamie? E-mail it to editor@fitnessrxwomen.com.

JAMIE EASON MIDDLETON IS A FORMER NFL CHEERLEADER AND A FIGURE COMPETITOR. JAMIE HOLDS A BACHELOR'S DEGREE IN COMMUNICATION AND HAS APPEARED IN HUNDREDS OF MAGAZINES BOTH AS A MODEL AND A CONTRIBUTING WRITER. AS CREATOR OF THE POPULAR LIVEFIT TRAINER, JAMIE HAS HELPED HUNDREDS OF THOUSANDS OF PEOPLE REACH THEIR FITNESS GOALS.

● BY ASHLEY KALTWASSER



I GET CALF PAIN AND SHIN SPLINTS A LOT WHEN I RUN LONG DISTANCES, BUT I REALLY WANT TO KEEP UP A CARDIO ROUTINE SO THAT I CAN LOSE MORE WEIGHT (I'VE FOUND THAT I NEED TO DO A LOT OF CARDIO TO LOSE WEIGHT AND PREVENT WEIGHT GAIN). DO YOU HAVE ANY ADVICE OR SUGGESTIONS FOR CARDIO ALTERNATIVES?

I really am a firm believer of high-intensity interval training.

This can be done on a stationary bike, elliptical trainer, a StepMill or Jacobs Ladder as well. You may find that these workouts burn even more calories than you would have with the long running. Doing your exercises on these machines and equipment can minimize the pain and overuse in your calf muscles. Also, it's a great way to switch up your workout. These workouts are great because they take less time and are more effective.

I HAVEN'T BEEN ABLE TO LOSE WEIGHT IN TWO MONTHS EVEN THOUGH I'VE BEEN STICKING TO A 1,500-CALORIE DIET OF HEALTHY FATS, CARBS, PROTEIN, ETC. AND TRAINING FOUR OR FIVE DAYS A WEEK. ANY ADVICE FOR GETTING THROUGH A PLATEAU?

We all hit plateaus every once in a while! Your body is adapting to your workout regimen and diet. I would suggest that you first re-evaluate your diet. Swap some foods around and even the carb-fat-protein ratio. For example, if you've been doing a lower carbohydrate, higher fat diet, perhaps it's time to increase the carbs and lower the fats.

Same principle applies to training. If you've been doing mainly lifting with heavy weights, you can adjust your workouts to shock the muscles. Maybe try some plyos, lighter weight/higher rep exercises. The possibilities are endless. Get creative!

I JUST CAN'T SEEM TO GET RID OF MY NIGHTLY CRAVINGS FOR SWEETS. WHAT CAN I DO?

Make sure that you are getting a steady amount of fats throughout your day. Fats help keep you full and satisfied! Also, don't confuse cravings for thirst. Drink a few glasses of H₂O and see if those cravings go away. If I am still having cravings, I will drink some herbal tea with stevia (chamomile is great for nighttime!) or even slice up some cucumbers and sprinkle sweetener such as Splenda or stevia on them. Refreshing and delicious! You can also try brushing your teeth with mint toothpaste. This is believed to demolish cravings as well.

IF I AM SORE FROM A PREVIOUS WORKOUT, IS IT BETTER TO REST COMPLETELY THAT DAY OR PUSH THROUGH ANOTHER WORKOUT?

There are things you can do to help assist the recovery of soreness. You can try a little bit of light cardio to get the blood pumping. This will push out the lactic acid (which is what's making you sore). I would also recommend getting a massage or trying the foam roller. Obviously, stretching will help too. After you've done these things and you're still feeling sore, you can try focusing on training the muscle groups that are not sore. I do not like to work out muscles that are too sore, because they need a chance to repair and rebuild.

I LIKE STICKING TO A HEALTHY DIET, BUT SOMETIMES CHICKEN AND FISH JUST GET BORING. WHAT ARE SOME OF YOUR FAVORITE SEASONINGS OR SUGGESTIONS FOR MAKING THESE MEALS MORE DELICIOUS?

Don't be afraid to add condiments! Some of my favorite ways to flavor my chicken are mustard with stevia (honey mustard) and light soy sauce plus stevia (teriyaki). And let's not forget about the classics such as fresh-diced onion and garlic. I like to lightly sauté the onion or garlic in a pan with my food. Add seasonings like chili powder or adobo seasoning for extra flavor. Like it spicy? My favorite hot sauce is Cholula Chipotle Pepper. ■



Have a question for Ashley? Email it to editor@fitnessrxwomen.com.

IFBB BIKINI PRO ASHLEY KALTWASSER IS THE 2014 BIKINI OLYMPIA CHAMPION. ASHLEY BELIEVES THAT SERIOUS FITNESS DOESN'T HAVE TO BE BORING. BE SURE TO CHECK OUT ASHLEY'S "KEEP IT FRESH" COLUMN ON FITNESSRXWOMEN.COM, WHERE SHE SHARES WAYS TO KEEP YOUR TRAINING AND NUTRITION FUN AND FLAVORFUL. FOLLOW ASHLEY ON TWITTER @ASHLEYKFIT AND FACEBOOK. FOR SPONSORSHIP, APPEARANCES, ETC., CONTACT FITNESS MANAGEMENT GROUP.

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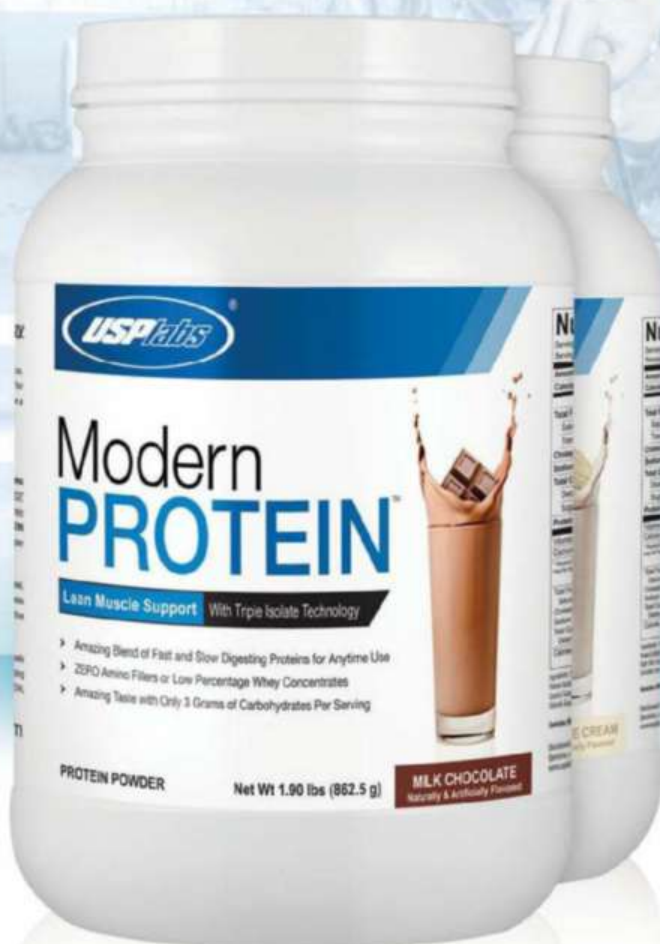
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Photo: Peter Z. Jones

I HAVE LOST WEIGHT AND AM SEEING SOME DEFINITION IN MY ABS, BUT FOR SOME REASON CANNOT ACHIEVE DEFINITION IN MY UPPER ABS. WHAT SHOULD I DO?

For the record, there are no upper and lower ab muscle groups; it's all rectus abdominis and we're talking origin and insertion, but I digress. Do you chew gum? That could be causing bloating. Do you eat big portions and infrequently like a snake? That could cause it. Do you ingest enough fiber? Digestive enzymes? Do you do any sprints in your cardio training? All things to try but not all at once, as you will want to see what works. Obviously, make sure your ab training includes all three planes of motion and added resistance so that those bases are covered!

I HAVE A FAST METABOLISM, SO IT TAKES A LOT FOR ME TO GAIN WEIGHT, LET ALONE MUSCLE. HOWEVER, I DON'T HAVE A VERY BIG APPETITE AND I'D LIKE TO BUILD SOME MORE MUSCLE, ESPECIALLY IN MY ARMS. ANY ADVICE?

You do realize that by putting that in writing for the whole world to see that a lot of people automatically dislike you, right? OK, just making sure. Whew. I am sorry for your suffering. I know— if it's a real problem to you, it's a real problem. Just know that most people throw coins in fountains and light candles in church wishing for that to happen to them. Back to you: Usually what this will require is some simple math— although, there are exceptions, so get out your abacus and break down what you eat in a day calorically to maintain your current weight over the course of a week. After that week, add 300 calories per day to your diet, preferably in the form of a clean protein source. Maintain this new caloric intake for two weeks and see where your weight is then. If it hasn't budged, add another 300 calories a day and stick to that for a week. You will find your (scale) tipping point pretty quickly. Oh, and word to the wise— enjoy it while you can because it can be a slippery slope.

I'M 55 AND WANT TO LOSE ABOUT 30 POUNDS, BUT IT'S BEEN YEARS SINCE I'VE BEEN ACTIVE. HOW DO I GET STARTED AND WHAT'S THE BEST APPROACH?

Personally, I'd go to my doctor and get a full checkup and make sure he/she green lights the endeavor. Then, I'd find the best gym closest to my home that I felt comfortable in and hire a trainer. If that's not in the cards for you, I would try a number of different group exercise classes until I found one that I liked and got me moving, and I would LOCK it into my schedule three times a week, and take 45- to 60-minute walks on three of the other days in the week. On the seventh day, you rest. Keep your head down and plow through this for a month with no showing up late, no canceling, no bailing early. Then re-evaluate the program and the process. To be clear, there is a nutrition component that needs to be dealt with as well, but that's another article! Make sure you eat breakfast, make sure you eat within 60 minutes of the end of your workout, make sure you drink at least as many ounces of water as you weigh in pounds, and make sure to DO YOUR BEST to get eight hours of sleep a night— hey, a trainer's gotta dream!



I'M WORRIED ABOUT THE HOLIDAY SEASON THAT'S APPROACHING BECAUSE I ALWAYS SEEM TO GAIN WEIGHT DURING THIS TIME. IT'S HARD TO FIND THE TIME TO GET TO THE GYM, AND I END UP EATING VERY BADLY DURING PARTIES. ANY ADVICE FOR GETTING THROUGH THE HOLIDAY SEASON WITHOUT LOSING ALL THE PROGRESS I'VE MADE THIS YEAR IN TERMS OF HEALTH AND WEIGHT LOSS?

Whatever you do, don't wear the Triple Crown: 1. Bad/excessive eating/drinking. 2. Less or no exercise. 3. Less than optimal sleep. That makes January and February colder than ever, outside AND inside your house. Pick your poison and do your best at the rest. If it's a drinking night (we've all been there), eat clean, match your alcohol ounce for ounce with water, and get as much sleep as possible. If it's an eating night (been there, too), then lay off the sauce— in your glass (AND on the food if possible— so little return for those calories) and get to bed. If it's a stay-up-late night, then try to keep the food clean and the alcohol to a minimum— I know you're not staying up late and sipping tea (I'm not delusional), but I'm offering a way to minimize the collateral damage!

My own personal credo is to NEVER miss my workout. Period. No exceptions. It's the only thing I can truly control and therefore I do. The best laid plans with food and sleep can be derailed with alcohol. The best laid plans regarding alcohol and food are subject to rewrites when you are exhausted. Take-home message: Stick to your training with fervor. Do your best at the table. Don't be a lush (too often). And dip out early and get to bed; I promise you're not missing anything. ■

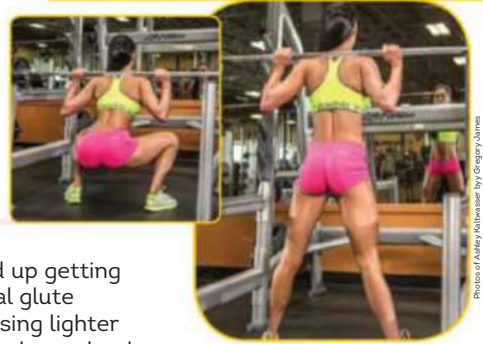
GOT A QUESTION FOR GUNNAR?
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● BY BRET CONTRERAS, MS, CSCS

FINDING THE SWEET SPOT IN YOUR GLUTE TRAINING



Photos of Ashley Holloway by Gregory James

Pretend you're at the gym, you're all warmed up and you're about to start squatting. You put the bar on your back and perform 10 repetitions. You add 10 pounds on each side of the bar, rest around 90 seconds, and perform 10 more repetitions. You repeat this sequence a couple more times until you reach a load that is very difficult to perform for 10 repetitions. During each of these sets, assuming that you used fairly good technique, your gluteus maximus activation will have increased compared to the prior set.

Research has shown this to be the case with squatting variations; gluteus maximus activation indeed increases with heavier loads.^{1,2} In my lab, I have found this relationship to be consistent with axially loaded movements, or movements that place vertical loads onto the body, such as squats, lunges and deadlifts. This plays a case for going heavy in your lower body training if seeking maximum glute development. But before I continue, I'd like to mention that there are several studies that show that light loads build just as much muscle as heavy loads as long as training is carried out to the point of muscular failure. As a matter of fact, I've been involved in the recent publication of two such studies.^{3,4} However, no study to date has examined heavy versus light load training on gluteus maximus muscle growth. Therefore, we can only speculate based on other evidence.

In testing the electromyographic (EMG) activity of numerous clients and subjects over the past seven years, I have noticed that going heavier when training the glutes does not always result in greater glute activation. Sometimes it simply results in greater activation of other synergistic muscles. I have come to realize that many exercises contain an inherent sweet spot that maximizes gluteus maximus activation. This "sweet spot" tends to exist to a greater degree in exercises that load the hips horizontally, such as hip thrusts, back extensions and cable kickbacks. However, the precise sweet spot really depends on the individual.

Last year, I tested two male and two female subjects in gluteus maximus activity during the barbell hip thrust exercise. The subjects included yours truly, in addition to my clients Sammie, Erin and Andrew. When Sammie and I went heavier, our glute activation rose according to the demand in load. In fact, our glutes activated to the highest degree when we went as heavy as possible for three repetitions. It should be noted that form criteria was strict— we had to reach full hip extension and maintain good mechanics in the back, pelvis and hips.

The same findings did not occur with Erin and Andrew. When they went heavier in the barbell hip thrust, their glute activity quickly plateaued at around 55 percent of 1RM. In other words, their glutes activated to the greatest degree when they used approximately half of the heaviest load that they could possibly lift in the exercise. After this point, going heavier did not result in greater gluteus maximus activation. This is important because they can perform more than 20 repetitions with 55 percent of 1RM

loads, so they end up getting much greater total glute activation when using lighter loads compared to heavy loads.

As you can see, for Sammie and me, going heavy in the barbell hip thrust is a wise strategy, but for Erin and Andrew, it is not. I have noted similar findings with 45-degree back extensions and cable kickbacks. In the case of the 45-degree back extension, some individuals achieve just as much gluteus maximus activation when using just bodyweight as they do when holding onto a dumbbell. The additional loading can increase hamstring activation without affecting glute activation. And with cable kickbacks, it is often the case that going heavier than a load that can be lifted for 12 repetitions does not result in greater glute activity.

I cannot predict the loads that will maximize your gluteus maximus activation during barbell hip thrusts, back extensions and cable kickbacks— only you can figure this out by paying close attention while performing the exercises. You have to go by feel and experiment with a variety of loads in order to determine your sweet spot. It could be that you're like Sammie and me— capable of going extremely heavy while almost linearly increasing glute activation. Alternatively, you could be like Erin and Andrew in that your glute activation tops out at a fairly light load and fails to increase with heavier loading.

I have a large community of women that participate in my Get Glutes forum. I asked them to try to hone in on the loads that made them feel their glutes working hardest during barbell hip thrusts, and the majority of women self-determined their "sweet spots" to be in the 60 to 65 percent of 1RM range. If the heaviest weight that they could hip thrust for one repetition was around 275 pounds, they'd feel their glutes working best when they used approximately 185 pounds for three to four sets of 10 to 15 repetitions. A variety of exercises and loads are ideal for maximizing glute development, but I recommend paying close attention to what loads you feel targeting the glutes the best during different exercises and sticking to those loading ranges predominantly. ■

REFERENCES

1. Aspe RR, Swinton PA. 2014. Electromyographic and kinetic comparison of the back squat and overhead squat. *J Strength Cond Res.* 28(10):2827-36.
2. Looney DP, Kraemer WJ, Joseph MF, Comstock BA, Denegar CR, Flanagan SD, Newton RU, Szivak TK, DuPont WH, Hooper DR, Häkkinen K, Marek CM. Electromyographical and Perceptual Responses to Different Resistance Intensities in a Squat Protocol: Does Performing Sets to Failure With Light Loads Recruit More Motor Units? *J Strength Cond Res.* 2015 Aug 10. [Epub ahead of print]
3. Schoenfeld BJ, Rataess NA, Peterson MD, Contreras B, Sonmez GT, Alvar BA. 2014. Effects of different volume-equated resistance training loading strategies on muscular adaptations in well-trained men. *J Strength Cond Res.* 28(10):2909-18.
4. Schoenfeld BJ, Peterson MD, Ogborn D, Contreras B, Sonmez GT. Effects of Low- Versus High-Load Resistance Training on Muscle Strength and Hypertrophy in Well-Trained Men. *J Strength Cond Res.* 2015 Apr 3. [Epub ahead of print]

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WOMEN'S HEALTH

THE 12-MINUTE HIIT WORKOUT

Numerous studies have shown that high-intensity interval training is effective and can burn fat quickly. The other appeal of this type of training is that it can be done in less time. As a result, fitness enthusiasts from all over have included HIIT in their training and continue to tout its benefits.

Typical HIIT training involves 30 to 40 seconds of very hard sprinting followed by 15 to 20 seconds of jogging or walking, and is repeated several times. This method is difficult but effective and is often reserved for more advanced exercisers.

But in 2014, a study on HIIT using out-of-shape adults found that few of the participants became more fit after the study's

completion, according to *The New York Times*. This study involved overweight and out-of-shape adults who were asked to complete high-intensity interval training for three months. The participants could perform one of two common types of training protocols— four minutes of fast jogging with a rest and then four more minutes of fast jogging, or 30 seconds of full-out effort, followed by rest, and then repeated three times.

The researchers believed that few of the participants became more fit because early in the study, most of the participants had quit doing most or all of their exercise assigned to them for the study (study participants were supposed to do some exercise sessions on their own, and some were supervised).

As a result of the findings of this study and others like it, Jens Bangsbo, Ph.D., a professor of physiology at the University of Copenhagen in Denmark, and his colleagues came up with the 10-20-30 training routine. Dr. Bangsbo studies high-intensity interval training, and in his lab had found that HIIT did make people fitter— but those studies were typically done on very motivated athletes in supervised settings, according to *The New York Times*. The 10-20-30 training approach is an effort to make HIIT training more realistic for the average person.

"It's just fun, which is important for beginners," Dr. Bangsbo told FitnessRx for Women. "They have fun and would like to continue [to exercise]."

A NEW HIIT

This is how 10-20-30 training works: You gently run or use a machine for 30 seconds, then accelerate to a more moderate pace for 20 seconds, then for the last 10 seconds, you sprint at full force— as hard as you can— and then repeat the sequence.

People have found this type of training to be appealing because it's easy to count your time without using a stopwatch, and the most difficult part of the workout only lasts 10 seconds at a time.

Dr. Bangsbo and colleagues put the 10-20-30 training method to the test in a study that was published in *The Scandinavian Journal of Medicine & Science*. The study involved 132 recreational runners who were mostly middle age. The runners traded two of their usual weekly workouts for 10-20-30 training. A control group of 28 runners continued their regular training. At the beginning of the study, all of the runners had physiological testing, which included a simulated 5-kilometer run.

After eight weeks, it was found that almost all of the 10-20-30 runners were still following the program, and when they ran another 5K, they on average had decreased their time by 38 seconds. In addition, almost all of the runners improved in other areas of health, such as decreased blood pressure. As for the control running group, no changes were found.

In his studies, which have involved both beginner and more seasoned runners, Dr. Bangsbo told FitnessRx for Women that not only did the 10-20-30 program produce results like lower blood pressure and cholesterol levels and improved running time, but that people also tend to find this type of training more enjoyable. The idea, he said, is that you are doing shorter intense work and then keeping your heart rate up during the 20- and 30-second portions.

In addition, Dr. Bangsbo mentioned that another unique

benefit of 10-20-30 is the social element. He noted that running clubs have actually increased membership with the method because it allows runners at different levels to run together— because after running intensely, friends with different running capacities can get back to running together for the slower portions.

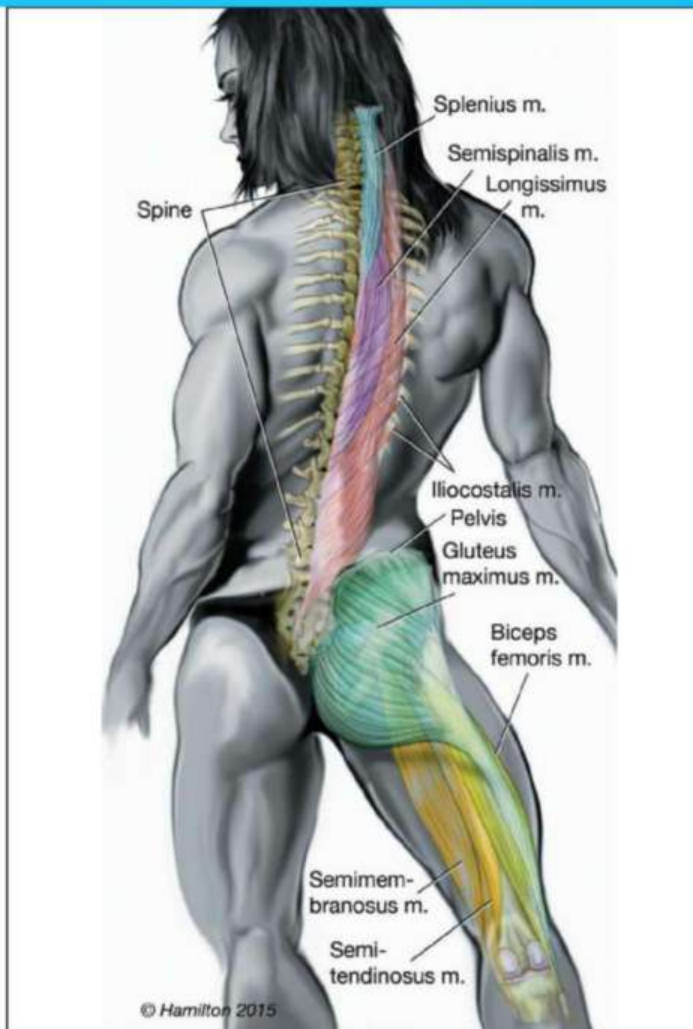
Dr. Bangsbo has written a book on the subject that is currently available only in Danish— he's working on getting it printed in the U.S. and in English. In addition, he plans to do further testing on this method of training, including with biking. But he is hopeful that using the 10-20-30 method on biking will also be beneficial.

"I'm sure you will see major improvements [using this method in biking]," he said.

TRY IT OUT

Dr. Bangsbo suggests doing 10-20-30 training twice a week (for both beginners and more advanced runners) in addition to other type of moderate-level training sessions throughout the week. "You can definitely still do [traditional] HIIT ... but the four-minute intervals are more demanding," while 10-20-30 training has been shown to be less difficult and more efficient, he said. If you do five 10-20-30 intervals in a row, rest and then do five more, you can complete an effective cardio session in just 12 minutes.

So whether you are a seasoned athlete or just getting into more hardcore training, you might want to try out this method— it may be just what you need to make improvements like never before. If nothing else, it's always a good idea to switch up your training methods in order to keep your body guessing, which can help facilitate results. The other great part is that it's simple enough to count in your head and keep track of your time. Try it with jogging, rowing or with a bike— whatever type of cardio gets you moving! ■



The rear thigh and gluteals are among the most challenging areas to firm and shape. In part, this is because the hips and rear thighs love to wrap themselves in a little extra fat and are among the last areas to lose fat even if you are dieting strictly and religiously doing cardio. To make things worse, underdeveloped posterior thigh and less-than-firm gluteus muscles can take on a soft and saggy appearance. Even slim and otherwise fit people can possess soft and weak hamstrings¹ that lack tone, and this detracts from the overall shape of the lower body.

Nevertheless, this can be overcome, and by the time the snow melts next spring, your posterior thighs and gluteal muscles can be transformed from weak and soft to toned and shaped. This exercise will also strengthen your spinal muscles and improve your posture, completing the posterior body transformation.

TONE UP YOUR LOWER BODY With **GLUTEAL-HAMSTRING RAISES**

Muscles Engaged By Gluteal-hamstring Raises

The hamstrings, spinal erector and gluteal muscles are strongly activated by gluteal-hamstring raises. The long head of the biceps femoris muscle of the hamstrings attaches to the ischial tuberosity,² which are the bony parts of your posterior pelvis that you sit on when you are in a chair. The fibers of the short head of biceps femoris begin on the lower one-third of the femur bone just above the knee. Both heads of the biceps femoris muscle fuse into a thick tendon, which crosses the lateral side of the knee joint to attach to the fibula bone (and some ligaments) and acts to flex the leg at the knee

joint (bringing the heel toward the buttock).² The semitendinosus muscle fibers of the hamstring group attach to the ischial tuberosity and insert into a cord-like tendon that crosses the knee joint posteriorly to anchor on the medial side of the superior part of the tibia bone.² This hamstring muscle crosses the knee and the hip joints posteriorly² and can both extend the thigh at the hip joint (i.e., it helps to draw the thigh posteriorly as when running) and flex the leg at the knee joint.

The gluteus maximus is the largest and thickest of all the hip muscles and it is strongly activated by the gluteal-hamstring raise. Its muscle fibers

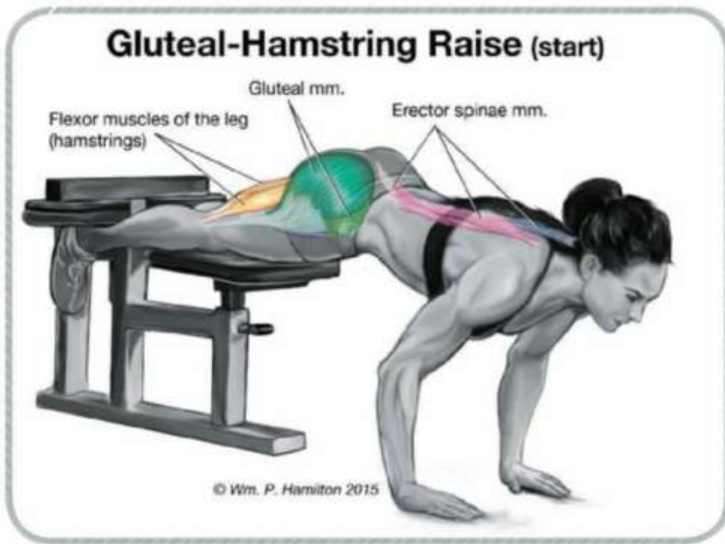
attach on the crest of the ileum of the hip bone, and the sacrum. It inserts on the posterior part of the femur bone of the thigh and on the iliotibial band of the fascia lata, a tough band of connective tissue running from the hip down the lateral side of the thigh to the knee. The gluteus maximus extends the thigh. When the thigh is fixed as in the gluteal-hamstring raise, and the hip joint is free to move, the gluteus maximus muscle can also help to extend the lower back. The smaller gluteus medius and gluteus minimus muscles abduct the femur (brings the thigh to the side) and therefore does not have a large role to play in the gluteal-hamstring raise.

GLUTEAL-HAMSTRING RAISES

Generally, excessive “hyper” extension in this exercise should be avoided because this can compress the vertebral disks and the nerves that exit between the vertebrae. However, the extension part of the exercise will activate all of the muscles along the spine and the gluteal and hamstring muscles to make this a superior lower body exercise.

Proper Exercise Form

1. Adjust the gluteal-hamstring bench so that the knees are bent, and the thighs are resting on the machine in a kneeling position. The feet should be placed firmly on the foot platform and the back of the calves pressed lightly against the upper ankle pad.
2. Your back will be slightly rounded with your chin tucked in toward your chest. Lower your body until your spine is flexed and your torso is perpendicular to the floor. As you lower, your knees will extend. Drop as low as you can so your head is near the floor and your waist is flexed.
3. Raise your body until your torso is again perpendicular to the floor. As you approach the top position, squeeze your gluteals together to finish in a vertical position and the knees will again flex on the way up. Try to keep your upper and lower body in a straight line and do not hyperextend the back at the top.⁶ Keep each movement slow and controlled and avoid any swinging of your torso upwards so that you do not invite injury.
4. Repeat the movement for three sets.



The erector spinae muscles are also activated by gluteal-hamstring raises and this muscle group extends the vertebrae of the spine.¹ The ilio-costalis muscle is the most lateral of the erector spinae group. It begins from the iliac crest of the hip bone, and inserts into the ribs.^{3,4} The intermediate muscle of the erector spinae group is the longissimus muscle. This muscle runs almost the entire length of the back, from the lateral bony projections of the vertebrae called transverse processes, to transverse processes of vertebrae, which are more superior.⁵ The spinalis muscle runs up the center of the back. It arises from the spinous processes (small projections that lie directly in the center of the vertebrae) in the lumbar and lower thoracic regions and they attach on the spinous process of the thoracic and neck (cervical) regions.⁴ When weak, the erector spinae muscles contribute to back pain and poor posture.

Weak and tight hamstrings can increase the risk for back⁷ and knee⁸ injuries, and gluteal-hamstring raises will help you strive toward achieving the goal of having hamstring strength that is about 60 percent of your quadriceps strength.^{9,10} The gluteal-hamstring raise is difficult to master at first, but stick with it, because soon you will be pumping out rep after rep. The gluteal-hamstring raise will tone the hamstrings and shape gorgeous, firm gluteals, while also strengthening your lower back. There is no doubt that this exercise will begin to transform your lower body into stunning new shape. ■

REFERENCES

1. Ebben WP: Hamstring activation during lower body resistance training exercises. *Int J Sports Physiol Perform* 2009;4:84-96.
2. Moore K.L., and A.F. Dalley. *Clinical Orientated Anatomy* 4th Lippincott Williams Williams Philadelphia, 1999, pp. 563-571.
3. Guo LY, Wang YL, Huang YH et al: Comparison of the electromyographic activation level and unilateral selectivity of erector spinae during different selected movements. *Int J Rehabil Res* 2012;35:345-351.
4. Moore, K.L. and A.F. Dalley: *Clinically Orientated Anatomy* 4th Edition, Lippincott Williams & Wilkins, 1999, pp-432-474; 690-698.
5. Kamil NS, Dawal SZ: Effect of postural angle on back muscle activities in aging female workers performing computer tasks. *J Phys Ther Sci* 2015;27:1967-1970.
6. Yoshizaki K, Hamada J, Tamai K, et al: Analysis of the scapulohumeral rhythm and electromyography of the shoulder muscles during elevation and lowering: comparison of dominant and nondominant shoulders. *J Shoulder Elbow Surg*. 2009;18, 756-763.
7. Bedard RJ, Kim KM, Grindstaff TL et al: Increased active hamstring stiffness after exercise in women with a history of low back pain. *J Sport Rehabil* 2013;22:47-52.
8. Wild CY, Steele JR, Munro BJ: Insufficient hamstring strength compromises landing technique in adolescent girls. *Med Sci Sports Exerc* 2013;45:497-505.
9. Kong PW, Burns SF: Bilateral difference in hamstrings to quadriceps ratio in healthy males and females. *Phys Ther Sport* 2010;11:12-17.
10. Koutedakis Y, Frischknecht R, Murthy M: Knee flexion to extension peak torque ratios and low-back injuries in highly active individuals. *Int J Sports Med* 1997;18:290-295.

THE HOLIDAY DIET ALTERNATE DAY FASTING

Eat All You Want *and* Lose Weight



Let's face it— the holiday season is a dieter's nightmare. No one wants to miss out on plates full of sweet potato casserole, turkey, stuffing and the works, then topped off with grannie's apple pie (à la mode of course), washed down with well-deserved cocktails that take the edge off family gatherings. So what if I told you there is such a thing as a diet that allows you to eat what you want and still lose weight? No, I'm not channeling Dr. Oz here— this is the real deal.

The average dieter goes straight to what's comfortable when it comes to weight loss— a calorie restriction (CR) diet. The CR approach follows the "calories in versus calories out" theory. If you reduce your daily caloric intake by 15 to 20 percent, you can lose weight. This theory works and makes sense. However, the end result is often a sluggish metabolism and feelings of deprivation that may lead you down a slippery slope of binges and poor eating behaviors. Not to mention, it's tough to stick with a low(er) calorie diet for an extended period of time.

Alternate day fasting is a form of intermittent fasting (IF). Like the CR approach to dieting, intermittent fasting is based on the idea that an accumulated reduction in calories at the end of a week leads to weight loss regardless of the food you take in. The difference between CR and IF is that with intermit-

tent fasting, calorie reduction is limited to certain days and/or windows of time. With intermittent fasting, you're not really dieting per se— instead, you're developing a new eating pattern. For instance, the fasting period might last for 20 hours, with a four-hour window "feed" time. Or there's another version where you fast for 16 hours, and eat within the following eight-hour time interval. With alternate day fasting (or AF), every other day you're fasting. On fast days, you're limited to a two-hour window of time to eat (between 12:00 and 2:00 p.m.), while on feed days, you're free to eat what you choose from 8:00 a.m. to 8:00 p.m.

So does intermittent fasting work? There is little research on the effectiveness of IF on body composition and weight loss in people who aren't overweight. But from the calorie restrictive nature of the diet alone and the research that does exist, the benefits are promising. The key is, like with any calorie-restriction diet, to reach an energy deficit throughout the week. If, on feed days, you end up eating more than what you would have eaten on fast days, diminishing the caloric deficit, you're defeating the purpose and your weight won't budge.

On the flip side, if you can manage to control your intake on feed days, intermittent fasting may have positive effects

on body composition and body fat loss. In a study published in the journal *Obesity Research*, scientists explored the effectiveness of traditional calorie restriction versus intermittent fasting on weight loss. While fat loss and weight loss was relatively similar in both groups, the intermittent fasting group lost less fat-free mass (aka muscle), indicating that intermittent fasting may be better at retaining the muscle you have worked so hard to develop. So long as you're eating enough protein and weight training regularly, there's no reason why you wouldn't be able to maintain and/or build lean muscle on this diet.

When you fast, the body goes through a number of cellular changes— all of which have an effect on weight loss. The most interesting cellular change is with the hormones insulin, norepinephrine and human growth hormone (HGH). When fasting, HGH increases. If you know anything about HGH, you know that it helps keep you lean and build lean muscle. In addition, insulin sensitivity improves and insulin levels decrease. With less circulating insulin, stored body fat is a more accessible fuel source. On top of all that, short-term fasting increases norepinephrine (the fat-burning hormone), resulting in a faster metabolism. This is good news for a calorie restriction style diet where the outcome is generally a more sluggish

TRAINING ON A FULL (OR EMPTY) STOMACH

There's convincing research on both ends of the spectrum in regards to fasted versus fed workouts on performance and weight loss. Since the pendulum tends to swing either way, it ultimately boils down to personal preference. So weigh the pros and cons, and decide for yourself.

In a study that compared fasted and fed-training in bodybuilders, 16 men participated and were allocated to two groups: eight practicing resistance training in the late afternoon in a fasted state, and eight training in the late evening in an acutely fed state for 29 days. Body mass and body fat percentage remained unchanged during the entire investigation for both groups—demonstrating no difference on body composition in fasted and fed training. Another study published in the *International Journal of Sports Nutrition and Exercise Metabolism* reported similar findings. Fasted versus fed endurance training in eight healthy men was examined in this study. In terms of body fat loss, fasting before exercise does not enhance the use of fat as fuel, whereas cardio in the fed state does. A small meal may be just what the body needs to get you through a tough workout and burn more body fat.

On the other hand, it makes sense that eating before a workout enhances performance, allowing you to train harder and longer, ultimately burning more calories than you could if you entered in to the workout with no energy in your system. Interestingly enough, there are studies that support this idea and even promote the notion that your body's ability to use fat as fuel during exercise is not thwarted in a fed state. When cyclists consumed a carbohydrate supplement during exercise, there was no difference in fatty acid oxidation from the fasted control group.

ALTERNATE DAY FASTING

We've talked a bit about intermittent fasting. So let's get into the details of alternate day fasting. Most people cringe at the thought of fasting every day. And that's where alternate day fasting has its advantages. You can still reap the same results of IF without the pressures and stress of restricting energy intake every single day. Since you're fasting every other day [with AF], on fast days you can look forward to a normal-calorie intake the very next day.

THE BREAKDOWN

The rules are simple: on feed days you can eat whatever you want from 8:00 a.m. to 8:00 p.m. After 8:00 p.m. on feed days, you'll fast until noon the following day. At this point, you're well within your fast day. On fast days you can eat a maximum of 500 calories between the hours of 12:00 p.m. to 2 p.m. After that, you'll fast again until 8:00 a.m. the following day (a feed day).

Even though the simple rules state you can eat whatever you'd like on feed days, the smart choice would be to pick healthy food choices and stay within a normal calorie range to be sure you don't go overboard and eat back your entire fast day caloric deficit. On fast days, stick with low-fiber, low-fat foods and focus on high carbs, protein, fruits and veggies. To make it easier, we're providing a four-week meal plan for you to start with. Use this meal plan as a baseline for where you go from here. Or if you liked what you ate and felt good about it, start the meal plan over at the end. Remember, you have the option to eat whatever you want on feed days. Just be smart about your food choices to get better results.

Ultimately, the diet you choose boils down to what works best for you and your lifestyle. Alternate day fasting is a great way to maintain and build lean muscle while losing body fat without feeling deprived. However, it's not recommended for the average health conscious person who's looking for the easy way out. The best approach to weight loss and improving physical activity continues to be making healthy lifestyle and nutrition choices while exercising regularly. »

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THE MEAL PLAN

Tip: When training on fast days, start with 10 grams of BCAAs plus water pre-workout, then have again during and after your workout. This will help boost energy levels while sparing your muscles from being used as fuel.

WEEK 1

FAST DAY MEAL

Power smoothie with 2 rice cakes

Recipe: 2 scoops vanilla whey protein, 1 tablespoon chia, ½ cup frozen fruit of choice, ½ cup frozen spinach, ½ frozen banana, ¾ cup nonfat milk. Blend well and enjoy!

Calories: 517; Protein: 62 g; Fat: 7 g; Saturated fat 1 g; Carbohydrates: 55 g; Fiber: 10 g; Sugar: 23 g

FEED DAY MEAL PLAN

Breakfast: 4 egg whites, ¾ cup dry oatmeal cooked in water, ¼ cup berries of choice, 1 ounce walnuts

Lunch: 4 ounces grilled chicken, 1 cup green beans, ½ baked sweet potato topped with 1 tablespoon butter

Snack: 1 sliced apple with 2 tablespoons natural peanut butter

Dinner: 4 ounces baked or broiled salmon, ¾ cup cooked brown rice, ¼ avocado, 1 cup steamed broccoli, small side salad topped with balsamic vinegar and 1 teaspoon olive oil

PM Snack: 6 ounces plain nonfat Greek-style yogurt

Calories: 1,758; Protein: 110 g; Fat: 81 g; Saturated fat: 18 g; Carbohydrates: 152 g; Fiber: 28 g; Sugar: 41 g

WEEK 2

FAST DAY MEAL

Chocolate Mocha Power Smoothie: **Recipe:** 2 scoops chocolate whey protein, 1 frozen banana, 1 teaspoon instant coffee granules, ¾ cup nonfat milk. Blend well and enjoy with 2 large rice cakes of choice.

Calories: 482; Protein: 60 g; Fat 3 g; Saturated fat: 1 g; Carbohydrates: 55 g; Fiber: 6 g; Sugar: 24 g

FEED DAY MEAL PLAN

Breakfast: 2 slices Ezekiel bread toasted, ¼ avocado, 4 egg whites

Lunch: 1 low-calorie whole-wheat wrap, 1 4-ounce can solid white tuna in water (drained) mixed with 2 tablespoons olive oil mayo, salt, pepper, and chopped celery, carrots and onions, plus 1 cup strawberries

Snack: 2 hard-boiled eggs, 1 part-skim mozzarella string cheese, 1 orange

Dinner: Large salad topped with veggies of choice, 4 ounces grilled chicken, 2 ounces blue cheese, 1 tablespoon cranberries, 2 tablespoons chopped walnuts, 2 tablespoons light balsamic vinaigrette dressing
PM Snack: 6 ounces plain nonfat Greek-style yogurt with 2 tablespoons fresh

blueberries
Calories: 1,662; Protein: 133 g; Fat: 81 g; Saturated: fat 24 g; Carbohydrates: 106 g; Fiber: 24 g; Sugar 27 g

WEEK 3

FAST DAY MEAL

1 cup cooked white rice, 6 ounces grilled chicken, 1 cup veggies of choice, 1 cup grapes on the side

Calories: 527; Protein: 42 g; Fat: 5 g; Saturated fat: 1 g; Carbohydrates: 73 g; Fiber: 3 g; Sugar: 2 g

FEED DAY MEAL PLAN

Breakfast: 1 cup shredded wheat cereal, 1 cup nonfat milk mixed with 1 scoop vanilla whey protein powder, top with ¼ cup fresh blueberries and 1 ounce cashew halves

Lunch: Large salad with tons of veggies topped with 4 ounces grilled chicken, ¼ cup chickpeas, 1 ounce slivered almonds, 2 tablespoons light balsamic vinaigrette dressing

Snack: 6 ounces plain nonfat Greek-style yogurt topped with fresh sliced peaches and 1 ounce chopped walnuts

Dinner: 6 jumbo shrimp, 1 cup whole-wheat pasta (cooked), ¼ cup canned tomato sauce, ¼ cup mozzarella string cheese, side of steamed veggies of choice

Calories 1,717; Protein: 152 g; Fat 63 g; Saturated fat: 9 g; Carbohydrates: 153 g; Fiber: 24 g; Sugar: 45 g

WEEK 4

FAST DAY MEAL

1 4-ounce turkey breast burger, 1 regular hamburger bun, topped with lettuce, tomatoes, pickles, onions, ketchup and/or mustard, plus ½ baked potato and 1 medium apple

Calories: 504; Protein: 28 g; Fat: 10 g; Saturated fat: 2 g; Carbohydrates: 78 g; Fiber: 8 g; Sugar: 24 g

FEED DAY MEAL PLAN

Breakfast: Protein Pancake— 1/3 cup oat bran or oatmeal, ½ scoop vanilla whey protein powder, 2 egg whites, splash of milk, dash of salt and cinnamon; whisk together and cook in a small skillet over medium heat. Top with 2 tablespoons peanut or almond butter and ½ sliced banana.

Lunch: 4 ounces cooked 90% lean ground beef, 1 cup cooked brown rice, 1/4 cup shredded cheese of choice, sautéed peppers and onions, plus side of fruit of choice

Snack: 100-calorie pack guacamole and fresh veggies of choice

Dinner: 4 ounces grilled chicken, ½ baked sweet potato topped with 1 tablespoon butter, 1 cup steamed veggies of choice

PM Snack: 2 hard-boiled eggs, 1 string cheese

Calories: 1,761; Protein: 118 g; Fat: 82 g; Saturated fat: 34 g; Carbohydrates: 142 g; Fiber: 19 g; Sugar: 25 g

4 TIPS FOR STARTING YOUR FIRST FAST

1. WORK OUT SMART. YOU MAY NOT HAVE THE ENERGY TO WORK OUT ON FAST DAYS. IF THAT'S THE CASE, LOWER THE INTENSITY OF THOSE WORKOUTS, OR LEAVE SWEAT SESSIONS TO NORMAL CALORIE DAYS.

2. DRINK UP. WATER IS YOUR FRIEND! STAY WELL HYDRATED BY SIPPING WATER AND OTHER ZERO CALORIE BEVERAGES THROUGHOUT THE DAY. THIS WILL HELP YOU MAINTAIN ENERGY LEVELS AND KEEP YOUR BELLY FULL.

3. THINK POSITIVE. THINK OF FAST DAYS AS TAKING A BREAK FROM EATING. THIS WILL HELP WARD OFF THOUGHTS OF DEPRIVATION AND MAKE FAST DAYS GO MUCH SMOOTHER FOR YOU. STAYING POSITIVE WILL HELP YOU MAINTAIN THIS MEAL PLAN FOR THE LONG HAUL.

4. STAY BUSY. TRY TO INCORPORATE FAST DAYS ON DAYS YOU'RE BUSIEST—THAT WAY, YOUR MIND STAYS BUSY AND YOU AVOID FOCUSING ON FOODS YOU WANT TO EAT. IF YOU'RE BORED AND HANGING AROUND ON THE COUCH, YOU'LL BE MORE INCLINED TO GIVE IN TO SNACK CRAVINGS AND TEMPTATIONS. ■

REFERENCES

1. Varady KA. Intermittent versus daily calorie restriction: which diet regimen is more effective for weight loss. *Obesity Review*. Jul;12(7):e593-601.
2. Khaleel Tabeai, et al. Effect of fed- versus fasted state resistance training during Ramadan on body composition and selected metabolic parameters in bodybuilders. *Journal of the International Society of Sports Nutrition* 2013; 10:23
3. Poole A et al. Exercising fasting or fed to enhance fat loss? Influence of food intake on respiratory ratio and excess post exercise oxygen consumption after a bout of endurance training. *Int J Sport Nutr Exerc Metab*. 2011 Feb;21(1):48-54.
4. Horowitz JF et al. Substrate metabolism when subjects are fed carbohydrate during exercise. *Am J Physiol*. 1999 May;276(5 Pt 1): E828-365.
5. Zauner C, et al. Resting energy expenditure in short-term starvation is increased as a result of an increase in serum norepinephrine. *Am J Clin Nutr*. 2000 Jun;71(6):1511-5.
6. Meneilly PL, et al. Enhanced thermogenic responses to epinephrine.

14 TIPS FOR FLAT ABS

with Sports Broadcaster **LINDSAY McCORMICK**

Lindsay McCormick has a passion for sports—after all, she hosted live events for Super Bowl XLIX and guest corresponded at one of the most anticipated fights of the decade (Mayweather versus Pacquiao). Recently, she was a sideline reporter for the quarterfinals of ESPN's The Basketball Tournament, and in 2013 hit the road with NBC's "Sunday Night Football" as their social host.

In addition to sports, Lindsay also enjoys staying in shape. Check out Lindsay's top tips for flat abs and a favorite workout!

LINDSAY'S TOP TIPS FOR FLAT ABS:

1. FOR ME, CARBONATED DRINKS LEAD TO BLOATING INSTANTLY.

So I avoid sodas and even carbonated water at all costs when I want to look svelte.

2. I EAT SMALLER MEALS THROUGHOUT THE DAY AS OPPOSED TO THREE LARGER MEALS.

This helps my stomach digest easier and quicker and helps to keep my energy and metabolism up.

3. PLANKING (and not the trendy kind from a couple years ago!). I try to incorporate as many planks (where I'm on my forearms holding my core tight) into my workouts as possible.

4. BOXING IS THE QUICKEST WAY FOR ME TO KEEP MY ABS FLAT AND TONE MY CORE.

The twisting and punching engages that area in a way that most workouts do not.

5. AFTER DOING ABDOMINAL WORK, I ALWAYS FLIP OVER AND HOLD AN UPWARD DOG to stretch out those muscles and lengthen them. I learned this secret from my dance instructor.

6. DRINK LOTS OF WATER! It'll flush out whatever toxins you have built up in your body and keep you more full throughout the day.

7. TRY OUT A CONTEMPORARY DANCE CLASS. Every single movement, from the leg kicks to the turns, requires core engagement. Plus, you'll have so much fun getting into the music you won't realize how hard you are actually working.

8. AVOID GUM. When you chew gum you are swallowing excess air, which for me always makes me bloated. It also will activate enzymes and extra acid that you really don't need unless you are actually about to eat food.

9. FOR MY HOME, NOTHING DOES THE TRICK LIKE PUTTING INSPIRATIONAL PHOTOS UP ON OUR FRIDGE. Think Britney Spears circa 1999. Who didn't want Britney's abs then?!

10. START YOUR WORKOUT WITH THE PILATES 100. In class, we use this move where we are in a pose similar to the boat pose in yoga and then pump our arms vigorously to warm up

the body and stomach area before we jump into the rest of our workout. We do this for 100 beats.

11. BE AWARE OF WHAT FOODS UPSET YOUR STOMACH.

I even got tested for food allergies and intolerances with the new ALCAT test. For me it's dairy and alcohol. When I avoid them, I notice my stomach is flatter, skin is clearer and overall I have more energy.

12. NOTHING IS MORE SOOTHING ON MY STOMACH AFTER DINNER THAN AN HERBAL PEPPERMINT TEA OR HOT LEMON WATER (WITH A DASH OF HONEY). It helps me digest food more easily.

13. I LOVE TO COOK IN MY HOME, which means I'm in control of what goes into the food. If I use more fresh garlic, I'm able to cut the amount of salt I use in half without losing any flavor. Less salt used equals a flatter stomach.

14. PROBIOTICS CAN BE YOUR BEST FRIEND. They come in yogurt or even at your local health food store in pure form. They'll help keep illness from bad bacteria away as you put more good bacteria into your system, and just overall balance yourself out—and make you feel like you can take on the world!



Chad Allen www.chadallen.com

LINDSAY'S FLAT ABS WORKOUT

Rotate through this circuit for the length of two of your favorite songs (the longer the songs are, the better).

PILATES 100S: Warm your stomach muscles up by holding a position similar to the yoga boat pose. Raise feet slightly off the ground while leaning back just out of a seated position. Pump arms vigorously for up to 100 beats.

PLANK/SIDE PLANK COMBO: Hold a plank position on your elbows for 25 seconds. Next, turn from the plank position to a side plank without dropping your hips or losing your form. Raise top arm into the air. Do both sides.

CRUNCH TWISTS: Lie on your back as if you are going to do a traditional crunch. As you start to get toward the top of the crunch, twist your body to one side. Do 15 on each side.

MOUNTAIN CLIMBER TWISTS: Go back into that plank position. This time, arms all the way extended rather than on your elbows. Pull one leg at a time into your body while twisting. Set foot back in original spot. Alternate feet for 30 seconds.

Finish it off with: a minute of traditional crunches, followed by an "upward dog" yoga position to stretch out your abdominal muscles. ■

THE APPEAL OF BOUTIQUE FITNESS

MEMBERSHIP AT SMALLER, SPECIALIZED GYMS IS HIGHER THAN EVER

Whether it's a boxing gym, cycling, barre or something similar, it seems as though almost every week, there is another "boutique" or specialized gym popping up somewhere— and fitness fanatics are flocking to them. In fact, a report by the International Health, Racquet and Sportsclub Association says that about 42 percent of about 54 million members of health and fitness facilities in the U.S. use fitness boutiques, according to *The Wall Street Journal*.

Interestingly enough, members are typically paying more at these smaller gyms that tend to offer fewer choices than the big-name gyms. But what these smaller gyms **do** offer is personalization and a specialty in one area of fitness that promises to deliver results.

"Because boutiques are highly specialized, they can really focus on honing the product, resulting in the best possible workout, taught by the best instructors for the overall best experience," said Katie Sullivan, Brand Manager and Assistant Studio Manager of **Swerve Fitness** in New York City.

Swerve, which opened in November 2014, is one such boutique gym. Swerve is a "team-inspired cycling studio," which means that the bikes are divided into three teams that compete over the course of the class. As you climb hills, push sprints and ride to the rhythm of the music, your personal performance is averaged with the performance of the other riders on your team for your team's overall Swerve score. As an individual and a team, you are working toward the highest Swerve score possible, said Kate.

With heavy hills, fast sprints and an upper body portion, every Swerve

class delivers a full-body workout in just 45 minutes, said Kate. "That reliability is important for our riders whose schedules are booked up by all the other amazing things they're doing outside of their workout."

After class, you receive an email with your personal stats, including your Swerve score, miles traveled, calories burned, and rank on your team and in the class. These metrics are logged in your online profile so that you can track your progress from class to class.

Since it opened two years ago, Swerve has continued to grow in popularity, with new riders coming through the door every month. In fact, in the past year alone, Swerve tripled the number of classes held per day in order to keep up with the demand, said Kate. "As a startup and a completely new concept, our product required a bit of explaining as we introduced ourselves. Now, more and more often, our reputation precedes us and people know what we're all about before we even tell them. And that's an incredible feeling."

So what is it about Swerve that keeps people coming back? "Our riders love the team-based setup. They find that it makes for a workout that's so fun, you don't realize you've actually pushed yourself harder than you knew you could. It's motivating and exciting," said Kate.

In addition, the in-class metrics and post-class stats also help keep riders accountable to work hard during class. "Watching your Swerve score grow throughout the ride motivates you to keep pushing forward, and reviewing your post-class email allows you to track your progress over time."



Swerve Fitness Studio



airflow.com

AIR AERIAL FITNESS IS ANOTHER BOUTIQUE GYM THAT HAS EXPERIENCED RAPID GROWTH OVER THE LAST FEW YEARS. AIR PRESIDENT SHAMA PATEL, WHO WAS AN ATTORNEY BEFORE SHE FOUNDED THE FIRST AIR STUDIO IN CHICAGO, IS THE ONE BEHIND THIS UNIQUE FITNESS CONCEPT THAT UTILIZES A SPECIAL HAMMOCK. THE WORKOUT COMBINES ELEMENTS OF BALLET, BARRE, DANCE, ATHLETIC CONDITIONING AND CIRCUIT TRAINING FOR THE ULTIMATE BODY-SCULPTING ROUTINE.

"WHEN I WAS LIVING IN CHICAGO BACK IN 2008, I JUST FOUND THAT A LOT OF THE WORKOUTS THAT WERE ON THE MARKET WERE VERY UNINSPIRING. SO I HAD THE IDEA OF JUST LEAVING MY CAREER AND OPENING UP KIND OF AN R&D LAB WHERE ALL WE WOULD DO IS CREATE REALLY UNIQUE FITNESS CONCEPTS WITH THE BEST TRAINERS IN THE CITY," SAID SHAMA.

SHAMA MOVED TO CHARLOTTE, NORTH CAROLINA TO BE NEAR FAMILY WHEN SHE OPENED UP HER FIRST BOUTIQUE GYM, FLEX + FIT. "I WOULD COME UP WITH A LOT OF DIFFERENT CONCEPTS AND THEN I WOULD WORK WITH MY TRAINERS TO COME UP WITH A FORMAT AND THEN PUSH IT OUT TO OUR MEMBERSHIP BASE. AND ONE OF THE FORMATS THAT I CREATED WHILE I WAS THERE WAS AIR."

THE AIR CONCEPT BECAME SO POPULAR THAT SHAMA MOVED BACK TO CHICAGO AND OPENED THE FIRST FREESTANDING AIR LOCATION IN SEPTEMBER 2013. SINCE THEN, AIR HAS EXPERIENCED A "FAST GROWTH," SAID SHAMA, AND THERE ARE NOW FIVE AIR LOCATIONS AROUND THE COUNTRY, AND SEVERAL PARTNER STUDIOS THAT HAVE BEEN TRAINED BY AIR MASTER TRAINERS IN AIR'S AERIAL YOGA CERTIFICATION.

HOWEVER, THE AIR WORKOUT DIFFERS FROM AERIAL YOGA. "AERIAL YOGA IS LIKE OUR DEEP STRETCH, RESTORATIVE CLASS, IT'S SLOW-PACED. AND AIR IS SUPER FAST-PACED. ... IT'S VERY BOOT CAMP STYLE."

AIR IS A DIFFICULT WORKOUT, BUT IT ATTRACTS PEOPLE OF ALL FITNESS LEVELS, SAID SHAMA— FROM CROSSFITTERS TO PEOPLE WHO NEVER WORKED OUT BEFORE AND ARE LOOKING FOR INSPIRATION. "AND IT'S DIFFERENT ENOUGH THAT IT MAKES IT FUN TO WORK OUT AT AIR."

AND WHILE MANY PEOPLE ARE CHOOSING BOUTIQUE GYMS, SHAMA POINTS OUT THAT IT'S REALLY ABOUT INDIVIDUAL PREFERENCE. "THERE ARE SOME PEOPLE WHO DON'T WANT THAT SMALLER BOUTIQUE GYM ... THEY WANT THE VARIETY; THEY WANT TO BE ABLE TO WORK OUT ON THEIR OWN AND ON THEIR OWN SCHEDULE," SHE SAID. "WHAT I REALLY LIKE ABOUT THE BOUTIQUE GYM IS YOU CAN REALLY BECOME ADVANCED AND AN EXPERT IN ONE AREA RATHER QUICKLY ... I THINK THAT PEOPLE REALLY DO LIKE TO SEE HOW THEY'RE ADVANCING, AND BECOMING IMMERSSED IN A PARTICULAR EXERCISE THAT REALLY MOTIVATES THEM." ■

4 YOGA POSES TO RELIEVE STRESS

Studies have shown that yoga can lead to improvements in depression, anxiety, energy, fatigue, stress and well-being. International yoga teacher Dashama Gordon agrees, so she shared a sequence of yoga poses that can help you reduce anxiety, and described how to perform them correctly. If you need to relieve some stress this holiday season, give these a try!

STANDING FORWARD BEND

"Starting in a standing position with feet hip distance apart or with feet together, lengthen the spine and gently fold forward reaching toward the floor and your feet. If your hamstrings are tight, bend your knees slightly so you can alleviate any tension or strain from your lower back. Breathe deeply into your belly as you allow your head to hang freely toward the floor. With your head positioned below your heart in a partial inversion, this will bring new blood flow and circulation to your brain, reducing anxiety and stress. When you are ready to release the pose (after 5-10 breaths) slowly roll the spine back up to standing and take a few more deep breaths."



EXTENDED PIGEON POSE

"In this popular and powerful hip opening pose, you will benefit most greatly from surrendering to gravity and breathing deeply into your lungs and belly. Start in a seated position with your right leg forward, knee bent with the right foot positioned near the left hip. If your hips are very tight and it's not possible for you to sit with both hips flat on the floor, place a cushion, block or pillow under your hips to alleviate some of the pressure. This will allow you to relax. Inhale and reach up to lengthen your spine and as you exhale slowly fold forward and place your palms or forearms on the floor in front of you. Hold this position for at least 10 breaths. If you can hold longer, such as one to two minutes, you will gain the most benefits. Surrender and relax into it and breathe deeply to release stress, anxiety or tension. When you are ready to come out of it, press yourself back up, and extend your right leg up and back to allow the blood to flow freely and circulation to return to the leg. Repeat on the left side."



COW FACE POSE WITH HEART OPENING ARM BIND

"This powerful hip opening seated position is great to release stress in both the lower and upper body. Start seated and bend your left knee, positioning your left foot near your right hip. Cross your right leg over the top of the left until both knees are stacked in one straight line. To intensify the stretch, press the feet away from your hips or to lessen the intensity, draw the feet toward your hips on both sides evenly. If your knees are feeling strained, place a cushion or pillion under your hips to elevate your hips above your knees. Hold this position while you breathe deeply. To integrate the arm bind, reach your left hand up toward the sky by your left ear. Bend your left elbow and reach your left hand toward the middle of your shoulder blades. If possible, lower your right arm reaching down and back to connect both hands behind your back. If you can't reach yet, you may wish to use a strap or towel until your shoulders open enough to bind your hands. Hold for five to 10 deep belly breaths and repeat everything on the other side."



WIDE LEG SEATED SIDE STRETCH

"The inner thighs are the contralateral muscle group to the hips, so this is a perfect counter pose to the previous two hip openers. Start seated with legs spread as wide as they can go. If this is very challenging for you, feel free to elevate your hips on a cushion to reduce the intensity. Knees are straight and tailbone is perpendicular to the floor to prevent rounding of the lower back. Inhale as you reach up and lengthen your spine, as you exhale, fold to the left, reaching your left arm and hand toward your right inner thigh and extend your right arm over your right ear and head toward your left foot. Keep lengthening the spine and breathing deeply to release stress and tension from the side body, inner thighs and shoulders. Hold five to 10 deep belly breaths and repeat on the other side." ■



Dashama is the author of *Journey to Joyful*, producer/star of 23 yoga DVDs, a FitFusion.com instructor and the creator of the 30-Day Yoga Challenge. In addition, she teaches Pranashama yoga and is the founder of Pranashama Yoga Institute. For more information on Dashama, visit FitFusion.com and www.dashama.com.

METABOLIC FINISHER CIRCUIT with

Battling Ropes

Part of training smart is using the best tool for the right job. And, when it comes to maximizing muscle building to improve the shape of your body, nothing beats resistance training. But when it comes to maximizing the metabolic demand, a 2013 study published in the *Journal of Strength and Conditioning Research* has shown that the performance of exercises with battling ropes elicit relatively higher acute metabolic demands than traditional resistance exercises performed with moderately heavy loading.¹

The idea behind using the battling ropes circuit featured in this article as a “metabolic finisher”—after you’ve done your strength training—is simple: Use a quick burst of energy at the end of a workout to increase your heart rate and burn more calories. This way you get to reap the unique benefits both types of exercise (resistance training and battling ropes) offer in order to make your workouts more comprehensive, diverse and interesting. Not to mention, metabolic battling ropes exercises and sequences such as what’s provided for you here are great for improving your upper body power-endurance (aka conditioning), which is the capacity to produce the same level of power for a longer time—the length of competition. This is especially important to keep your workouts balanced since so much of conditioning (power-endurance training) is lower body dominant (e.g., sprints, hills runs, stairs, etc.).

METABOLIC BATTLING ROPES CIRCUIT

Although battling ropes exercises are most commonly performed using both hands, which is still very effective, another 2013 study also published in the *Journal of Strength and Conditioning Research* found that one-arm versions of the battling ropes exercises were more stressful than using two arms. This same research also demonstrated that the battling rope exercise poses a significant cardiovascular and metabolic stimulus, with the effects made greater with using one-minute rest intervals compared to two minutes.

With this evidence in mind, the following battling ropes circuit involves performing four different single-arm exercises for 30 seconds on each arm. Once each side has been completed, you’ll rest one minute before moving on to the next exercise, and so on. Perform one full round as a metabolic finisher, which takes a total of seven minutes time to complete.

You can perform these four exercises in any order you’d like. Just make sure you perform as many repetitions of each exercise as you can in the 30-second time frame.



To perform the following exercises, you’ll anchor a set of battling ropes approximately 15-20 feet away around a stable object. Anchor the free end of the rope—the end you’re not going to be holding to perform the following single-arm battling ropes exercises—by wrapping it around the object you’re using as the anchor.

Nick Tumminello is the owner of Performance University in Fort Lauderdale, Florida. He’s also the author of the book *Strength Training for Fat Loss* and the DVD by the same name. For more information visit www.NickTumminello.com.

REFERENCES

1. Ratamess NA, et al. Comparison of the acute metabolic responses to traditional resistance, body-weight, and battling rope exercises. *J Strength Cond Res*. 2015 Jan;29(1):47-57.
2. Ratamess NA, et al. The Effects of Rest Interval Length on Acute Battling Rope Exercise Metabolism. *J Strength Cond Res*. 2015 May 30.

DESCRIPTION OF EXERCISES

ONE-ARM TIDAL WAVES

SET-UP: STAND FACING THE ROPE WITH YOUR FEET HIP-WIDTH APART, KNEES SLIGHTLY BENT WHILE HOLDING ONE END OF THE ROPE IN ONE HAND WITH YOUR ARM EXTENDED AT YOUR SIDE.

ACTION: START SWINGING YOUR ARM UP AND DOWN AT THE SAME TIME TO CREATE A PARALLEL WAVELIKE MOTION WITH THE ROPE. EXTEND YOUR LEGS EACH TIME YOU LIFT YOUR ARM SLIGHTLY OVERHEAD, AND ALLOW YOUR KNEES TO BEND EACH TIME YOUR ARM COMES DOWN. PERFORM 30 SECONDS ON THE SAME SIDE BEFORE SWITCHING SIDES.

COACHING TIPS:

- DO NOT ALLOW YOUR BACK TO ROUND OUT EACH TIME YOU SLAM THE ROPES DOWN TOWARD THE FLOOR.
- DON'T JUST USE YOUR ARM. ALLOW YOUR ENTIRE BODY TO CONTRIBUTE TO RAPIDLY MOVING THE ROPES.
- MOVE AS FAST AS POSSIBLE, WITHOUT PAUSING AT ANY POINT UNTIL THE SET IS COMPLETED.

ONE-ARM SMALL WAVES

SET-UP: STAND FACING THE ROPE WITH YOUR FEET HIP-WIDTH APART, KNEES SLIGHTLY BENT WHILE HOLDING ONE END OF THE ROPE IN YOUR HAND WITH YOUR ARM EXTENDED OUT IN FRONT OF YOU AT ROUGHLY WAIST HEIGHT.

ACTION: KEEPING YOUR ELBOW SLIGHTLY BENT, RAPIDLY RAISE YOUR ARM TO SHOULDER LEVEL, THEN, AS QUICKLY AS YOU CAN, LOWER IT BACK DOWN TOWARD THE FLOOR. CONTINUE WHIPPING THE ROPES UP AND DOWN AS FAST AS YOU CAN. PERFORM 30 SECONDS ON THE SAME SIDE BEFORE SWITCHING SIDES.

COACHING TIPS:

- MAINTAIN AN ATHLETIC, READY STANCE THROUGHOUT THIS EXERCISE.
- YOU'LL MAKE SHORTER, QUICKER WAVES IN THIS EXERCISE THAN IN THE ROPE TIDAL WAVES.

ONE-ARM ROPE RAINBOWS

SET-UP: STAND FACING THE ROPE WITH YOUR FEET HIP-WIDTH APART WHILE HOLDING ONE END OF THE ROPE IN EACH HAND ABOVE YOUR HEAD WITH YOUR ELBOWS BENT AND HANDS UNDERNEATH THE ROPE.

ACTION: EXPLOSIVELY PIVOT YOUR BODY AS YOU SIMULTANEOUSLY FLIP THE ROPE OVER AS IF YOU WERE THROWING IT TO THE FLOOR ON EACH SIDE OF YOU. MOVE YOUR ARM EXPLOSIVELY IN A RAINBOW-LIKE, ARCHING MOTION. THIS MOVEMENT SHOULD ALSO CREATE A RHYTHMIC, WAVELIKE MOTION WITH THE ROPE. PERFORM 30 SECONDS ON THE SAME SIDE BEFORE SWITCHING SIDES.

COACHING TIPS:

- MOVE THE ROPES BACK AND FORTH IN A FAST BUT SMOOTH AND COORDINATED FASHION. DO NOT PERFORM THIS EXERCISE IN A JERKING, STOP-START TYPE MOTION.
- USE YOUR LEGS A BIT AS YOU PERFORM THIS EXERCISE BY ALLOWING YOUR KNEES TO BEND AS YOUR ARM LOWERS TO EACH SIDE, AND BY EXTENDING YOUR LEGS EACH TIME YOUR ARM IS OVERHEAD BETWEEN EACH END OF THE ARCHING MOTION.

ROPE SPIRALS

SET-UP: STAND FACING THE ROPE WITH YOUR FEET HIP-WIDTH APART, KNEES SLIGHTLY BENT WHILE HOLDING ONE END OF THE ROPE IN YOUR HAND WITH YOUR ARM EXTENDED AT ABOUT WAIST HEIGHT.

ACTION: KEEPING YOUR ELBOW SLIGHTLY BENT, MAKE AN OUTWARD CIRCULAR MOTION BY MOVING YOUR ARM FROM YOUR KNEES TO ABOVE YOUR HEAD, CREATING A SPIRAL PATTERN. REPEAT THIS MOTION AS FAST AS YOU CAN. PERFORM 30 SECONDS ON THE SAME SIDE BEFORE SWITCHING SIDES.

COACHING TIPS:

- MAINTAIN AN ATHLETIC, READY STANCE THROUGHOUT THIS EXERCISE.
- DON'T JUST USE YOUR ARM. ALLOW YOUR ENTIRE BODY TO CONTRIBUTE TO RAPIDLY MOVING THE ROPES. ■

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ADVANCED BREAST THERAPY

**REDUCES BREAST PAIN,
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For a few years now, women have been using Advanced Breast Therapy to alleviate discomfort and pain from PMS and other hormone-related ailments (e.g., menopause, fibroid cysts). In addition, active women have also found that ABT helps increase firmness and fullness— meaning you don't have to choose between your breasts and overall body fat level.

And now, Lavoisier Health recently announced that the effective formula of Advanced Breast Therapy has been improved even further, and there are even many evolving ways to use the cream to make it very versatile for all women.

HOW IT WORKS

Before we take a look at some of the new uses for ABT, let's first examine how it works. For women, the adipose tissue within the breasts plays an essential vital role within the overall endocrine system. It provides a local source of estrogen, with levels fluctuating during the monthly cycle and during menopause. ABT is a topical application that works by nourishing this tissue in order to enable more optimal functioning. The cream is made up of unsaturated fatty acids that penetrate epithelial barriers and stimulate changes in fatty acid metabolism in subcutaneous adipose tissue.

John B. Stevens, MS, SMCR is a clinical pharmacologist who has personally seen many patients benefit from the cream. "It works almost immediately because of the essential fatty acids," he said. Stevens has particularly witnessed results in women who have stretch marks after having children and who are overweight. Other women have been able to improve the density of fat in the breast tissue.

By delivering key fatty acids and agents to assist in absorption locally to subcutaneous tissue, ABT allows for a more efficient nourishment and conversion into critical metabolites. As a result, women who use ABT have been shown to relieve breast tenderness, pain, lumpiness and/or dull heaviness, and hormonal-related breast discomfort (menstrual, menopause-related).

Not only is ABT safe, effective and easy to use, but the added bonus is that it contains all natural ingredients. (Additionally, it is possible that ABT may cause a reduction in local saturated fatty acids and increase local levels of unsaturated fatty acids— which may reduce overall cancer risk.)

An in-house study had two arms: one for the study of swelling and pain, and the other for treatment of fibroid cysts. For the first arm, there were eight participants with swelling and 16 with swelling pain (all linked to menstrual cycle changes or related to the presence of fibroid cysts):

- 100 percent of the patients with menstrual-related breast tenderness claimed a 100 percent improvement (self-assessed scoring for pain severity).
- 80 percent of participants with menstrual breast pain

had 100 percent improvement, and the rest had at least 75 percent improvement.

- 66 percent of participants with menstrual-related breast swelling had a 100 percent improvement and the remaining 34 percent had at least 75 percent improvement.

- 54 percent of those with menstrual-related pain and fibroid cysts or just fibroid cyst pain had 100 percent improvement, 42 percent had 75 percent or better improvement, and the remaining 8 percent had at least 50 percent improvement.

- For the fibroid cyst arm of the study, 13 participants with a diagnosis of fibroid cysts and 13 participants with cysts of unidentified origin were recruited. The cyst count was identified by palpation and/or mammography.

- 61 percent of all participants suffering from multiple cysts of unknown origin showed at least a 75 percent reduction in the number of cysts and 23 percent of participants showed a 100 percent improvement (no evidence of cysts).

- 76 percent of participants with multiple cysts had a 50 percent reduction in cysts.

- 66 percent of participants with a single fibroid showed 100 percent improvement and the rest showed at least a 75 percent reduction in cyst size.

- In addition, the team recruited 22 participants for a four-week study. 100 percent reported increases in firmness and 100 percent reported increases in size. None of them reported any adverse effects.

WHAT'S NEW

In addition, women are finding that ABT has many other benefits beyond firming and pain management— and ABT is currently testing these uses further. Women are using ABT as a wrinkle fighter, for lip enhancement, stretch marks, to improve elasticity in the hands, and just overall skin health.

Plus, ABT is now paraben free and includes sodium hyaluronate— helping ABT to work as a general moisturizer and firming cream." ■

For more information and to order Advanced Breast Therapy, visit www.LavoisierHealth.com. LHS offers ABT with a money-back guarantee of 90 days, so trying it is essentially risk-free.



HI-TECH PHARMACEUTICALS

HYDROXYELITE™



If your goal is to burn fat and lose weight, it's not always so easy. And even if you've been putting in the hard work, sometimes you need a little bit of help to lose that last bit of weight. And not only that, but also having the energy to exercise is essential and can make or break your workout.

You may remember the DMAA (dimethylamylamine) products from recent years that worked so well. Well now, DMAA is back in Hi-Tech Pharmaceuticals **HydroxyElite™**, an effective weight loss and energy enhancement supplement. The original **HydroxyElite™** formula has been improved to provide all the results you remember—Hi-Tech even took it one step further and combined the powerful effects of garcinia cambogia extract to an already effective formula.

While there are many fat-burning products on the market, **HydroxyElite™** stands out as one of the most clinically potent thermogenics out there, with effective ingredients like DMAA, caffeine, garcinia cambogia, rauwolfia canescens (aka rauwolfscine), baubinia purpurea extract, bacopa monnieri extract and cirsium oligophyllum extract.

WHAT'S INSIDE

HydroxyElite™ works because of its powerful, clinically studied ingredients. It combines the effects of DMAA as an alpha and beta adrenoceptor, and also contains caffeine as a natural stimulant. Caffeine has been shown to not only help increase energy, alertness and concentration, but also to have thermogenic effects.

Now, let's take a closer look at some of the other ingredients found in **HydroxyElite™**:

Garcinia cambogia extract is a fruit native to India, and the active ingredient in the extract is hydroxy citric acid (HCA). It has been reported that HCA may reduce fatty acid synthesis by approximately 40-70 percent for eight to 12 hours following a meal. Hi-Tech utilizes the premium garcinia

on the market.

The clinically studied citrin K is a source of standardized high-potency HCA and is meant to aid in weight loss naturally, as demonstrated in pre-clinical and clinical studies. It is a standardized extract from garcinia cambogia extract enriched with potassium salt. Potassium has been shown to improve penetration of HCA into the cytoplasm, and the potassium salt of HCA is more available where it competes with citrate molecules for the enzymatic activity of ATP citrate lyase. In fact, citrin K is patented for the induction of weight loss and the source used for **HydroxyElite™**.

Baubinia purpurea, which has been known to increase thyroid conversion of T4 while also increasing T3. It's been surmised that increasing thyroid hormone sensitizes or increases the lipolytic effects of adrenergic stimulation in fat cells. Another plant ingredient, bacopa monnieri, has been shown in an animal model to naturally promote thyroid hormone production.

HydroxyElite™ also includes the plant ingredient cirsium oligophyllum, which has been found to reduce the gain of bodyweight and fat mass. Specifically, this plant seemed to target subcutaneous fat mass (fat just below the skin that covers the muscles), in rats, over that of visceral mass (also known as "organ fat," which your body needs a fair amount of to protect the organs).

BURN FAT AND INCREASE ENERGY

This formula has been improved, and it shows. With such effective ingredients to assist in fitness goals, **HydroxyElite™** is a winning combination that can help increase energy without an overstimulated feeling and no crash after, while also helping to burn off the extra bit of fat and help control appetite.

For more information, visit hitechpharma.com. ■

CARNITINE:

the Fat-Loss Myth and Concerns?



Sometimes there is a chemical so central to a process in human physiology that it would defy logic that supplementing the amount or function of the molecule

should do anything other than make our health better. Certainly, the example of creatine and the benefits of creatine supplementation on not only lean muscle and strength, but also bone density, neurological function and other vital processes is an obvious demonstration.

Insofar as fat loss is considered, there are certainly a number of key molecules that have been investigated, such as ketones, beta-2 and beta-3 agonists, specific fatty acids, monoacylglycerides and diacylglycerides and various hormones. Yet, in the process of transporting free fatty acids from the cytosol (insides) of a cell to the mitochondria where fatty acids are “burned” to generate energy (ATP) and heat, there is one key molecule— L-carnitine.¹ L-carnitine acts like the hostess at a restaurant, escorting you to your table. Free fatty acids are either taken up from the bloodstream or released from fat stores in metabolically active cells (e.g., skeletal muscle, heart) into the cytosol (cell’s “insides”). In the absence of L-carnitine, the fatty acids would pretty much stand around or get converted into stored fat. It is similar to walking into a restaurant when the hostess is on break— you end up standing around in clusters, while some wander to a random table or just leave without “fueling up.” [For purists, L-carnitine’s action relative to beta-oxidation occurs between the outer and inner mitochondrial membrane, but let’s keep it simple for clarity’s sake]

Much like creatine, L-carnitine can be made in many tissues, so healthy people tend to have “enough” L-carnitine. As the “L” form suggests, carnitine is an amino acid, so the body is able to convert precursor amino acids (L-lysine and L-methionine) to L-carnitine in the kidney, liver and brain. However, there are recognized cases of carnitine deficiency. Also, endogenous (in the body) production can only produce a limited amount, so the diet is the primary source of L-carnitine in omnivores, sourced primarily from meat; red meat has the highest concentration, with poultry and fish containing much less. Vegans are nearly dependent upon endogenous production, accounting for 90 percent of their total L-carnitine. This sounds very similar to creatine’s story, if you are familiar with that. Also, when L-carnitine supplies are low, the kidneys will work harder to pull back any that spills into urine so it is not excreted.¹

What is a person to do? L-carnitine is present in the diet, and produced by the body, and its controversial metabolite has beneficial as well as potentially adverse effects.

WHY SUPPLEMENT L-CARNITINE?

So, is there any need to supplement L-carnitine? Certainly, there are people who have been identified with L-carnitine deficiency, often due to transporter issues (difficulty getting L-carnitine into cells, or absorbing it from the diet).² Additionally, newborns and infants may have a greater need for L-carnitine. But what about athletes, or healthy adults looking to lose fat? Initially, the answer appears to be “no.”³ Certainly, L-carnitine has not made a splash as a stand-alone product in the supplement market; it is not a banned substance; and there aren’t even any celebrity endorsers. Numerous studies have shown conflicting results, with many showing no added benefit from supplementing L-carnitine during a dieting phase.

Before tossing out L-carnitine, consider whether the studies have looked at conditions that might be relevant to athletes or specific diets. Could it be similar to creatine, where strength gains are not so spectacular in sedentary people, so L-carnitine would require an increase in fatty acid oxidation or impaired absorption? Are the benefits beyond the promise of more efficient fat loss?

L-carnitine has had a positive effect when used in combination with certain drugs. Sibutramine, a drug no longer available on the market, was an effective weight-loss drug with metabolism-boosting effects and also acted as an appetite suppressant; its structure shares features with amphetamine. In a yearlong study, subjects given L-carnitine (2 grams per day) in addition to sibutramine lost approximately four more pounds over the course of a year, compared to those given only sibutramine.⁴ Additionally, fat-cell derived changes consistent with better metabolic health. Another one-year long study using L-carnitine, this time in association with the drug (now over-the-counter) Alli (orlistat) also showed not only great fat loss (again, about four pounds more), but also signs of better insulin sensitivity and reduced inflammation.⁵ Orlistat blocks the digestion and absorption of dietary fat, which may reduce the absorption of L-carnitine from the gut. It is also possible that the reduced calories absorbed with orlistat may make the body more dependent on using stored fat. Regardless, these two studies (of one-year length) both showed similar results. So, does L-carnitine work for fat loss? It may, but it doesn’t seem to be quick, and may be dependent on other conditions for a relevant effect in these examples.

HEALTH BENEFITS

L-carnitine is not just a weight-loss supplement— it also

has been shown to have benefits in lowering blood sugar and improving the cholesterol profile in type 2 diabetics.⁶ In fact, there is a litany of health conditions where L-carnitine could or has shown to offer benefits. Peripheral vascular disease, erectile dysfunction, cardiovascular disease, dementia and memory issues, kidney disease and exercise performance are all areas where L-carnitine holds potential as a therapeutic agent.⁷

Diets in most L-carnitine studies have focused primarily on calorie restriction, but what about low-carb diets? An extreme example is the ketogenic diet, such as that prescribed for children with epilepsy and maintained for decades. Certain medications can interfere with L-carnitine's production or excretion, making a deficiency more likely. Further, the exaggeratedly high concentration of fatty acids and ketones produced with this diet are capable of raising the "acyl- versus free" L-carnitine ratio. This is a rough measure of the adequacy of L-carnitine in the mitochondria, and when the ratio becomes too high, it suggests that the body is not capable of handling the demands of all the fat being used for calorie burning. Though it is not universal, a fair percentage

Studies have shown conflicting results, with many showing no added benefit from supplementing L-carnitine during a dieting phase.

of those on a ketogenic diet become L-carnitine deficient (absolute or relative), and demonstrate better control of epileptic events, as well as respond better to medication when supplemented with L-carnitine.⁸

In calorie-restricted diets, the value of L-carnitine is less certain. However, commonly reported consequences of low-fat diets are fatigue and poor appetite control. In fact, it appears that lowering fatty acid oxidation may contribute to overeating.⁹ One possible solution to try may be to ensure that fatty acid oxidation (calorie burning) is optimized by supplementing L-carnitine, as many of the dietary sources of L-carnitine may not be appropriate food choices for a low-fat diet. A study of individuals with metabolic syndrome comparing L-carnitine supplemented subjects (where L-carnitine was administered intravenously) to a control group showed that L-carnitine reduced hunger and fatigue, as well as improved weight loss and metabolic changes, during very low-calorie dieting.¹⁰

Is it possible that even healthy people may be deficient without cause or symptoms? Well, though it seems a stretch, in a screening study looking for genetic anomalies in healthy adult volunteers, L-carnitine deficiency was detected and a genetic cause was determined.¹¹ There was only one case, but this was out of a group of only 80 subjects. In addition to low L-carnitine (due to a heterozygote transporter mutation), elevated 3-methylhistidine was present, suggesting elevated muscle breakdown. Again, all volunteers were initially screened and found to be healthy and without symptoms, by standard exams. This individual would likely be offered treatment similar to symptomatic L-carnitine deficiency cases, that being L-carnitine supplementation.

So, L-carnitine probably helps with weight loss, just not quickly or by itself. It has other health benefits, perhaps better expressed when consumed as acetyl-L-carnitine or propionyl-L-carnitine. Perhaps it even aids in athletic performance, especially when training increases the stimulus for increased or prolonged fatty acid oxidation.¹²

Unfortunately, best results require combining a considerable (~80 grams) load of carbohydrates to "push" the L-carnitine into the skeletal muscle and increase muscle stores, as well as increasing energy expenditure.¹³

ADVERSE EFFECTS

Unfortunately, all is not rosy with L-carnitine. During the last decade, reports have arisen of a metabolite produced by gut bacteria digesting L-carnitine (and choline) called TMA. TMA is further metabolized into a chemical called TMAO (trimethylamine N-oxide) and circulates through the bloodstream.¹⁴ Researchers looking for a link between red meat-based diets and cardiovascular disease discovered that high levels of TMAO were associated with a higher risk of cardiovascular disease. Other studies suggested a link to kidney failure, diabetes and certain cancers. Suddenly, a cloud looms over the fate of L-carnitine. However, it is also known that TMAO is also present in high concentration in seafood, which is associated with a positive (beneficial) cardiovascular effect. Further, though TMAO may be involved in harmful processes, it is also involved in protective functions. Clearly, there is much to be learned about this simple molecule.

So, what is a person to do? L-carnitine is present in the diet, and produced by the body, and its controversial metabolite has beneficial as well as potentially adverse effects. The conversion of L-carnitine and choline to TMAO happens in the gut bacteria. Some are exploring the various bacteria present in the gut to see if probiotics may reduce the TMAO conversion. Patients with deficiency of L-carnitine production or transport are treated lifelong with high-dose supplementation. Unfortunately, no one has reported on the cardiovascular health of this group. It is too cloudy to give a firm recommendation for or against L-carnitine supplementation. Its benefits are likely slow and require another agent working alongside for weight loss, and the athletic benefit is not conclusively proven. However, there is promise, as well as health benefits for important organs such as the heart and brain. If consuming L-carnitine, it would be wise to limit the daily intake to that used in studies (4 grams per day or less). Further, it will reduce the amount that reaches the gut bacteria if it is taken in divided doses of one gram. ■

Peripheral vascular disease, erectile dysfunction, cardiovascular disease, dementia and memory issues, kidney disease and exercise performance are all areas where L-carnitine holds potential as a therapeutic agent.

REFERENCES

1. Reuter SE, Evans AM. Carnitine and acylcarnitines: pharmacokinetic, pharmacological and clinical aspects. *Clin Pharmacokinet* 2012;51:553-72.
2. Magoulas PL, El-Hattab AW. Systemic primary carnitine deficiency: an overview of clinical manifestations, diagnosis, and management. *Orphanet J Rare Dis* 2012; Sep 18;7:e86. doi: 10.1186/1750-1172-7-e86.
3. Brass EP. Carnitine and sports medicine: use or abuse? *Ann NY Acad Sci* 2004;1033:67-78.
4. Derosa G, Maffioli P, et al. Effects of combination of sibutramine and L-carnitine compared with sibutramine monotherapy on inflammatory parameters in diabetic patients. *Metabolism* 2011;60:421-9.
5. Derosa G, Maffioli P, et al. Orlistat and L-carnitine compared to orlistat alone on insulin resistance in obese diabetic patients. *Endocr J* 2010;57:777-86.
6. Vidal-Casasiego A, Burgos-Peláez R, et al. Metabolic effects of L-carnitine on type 2 diabetes mellitus: systematic review and meta-analysis. *Exp Clin Endocrinol Diabetes* 2013;121:234-8.
7. University of Maryland Medical Center. Carnitine (L-carnitine). <https://umm.edu/health/medical/altmed/supplement/carnitine-lcarnitine>, accessed August 31, 2015.
8. Neal EG, Zupiec-Kania B, et al. Carnitine, nutritional supplementation and discontinuation of ketogenic diet therapies. *Epilepsy Res* 2012; Jul;100(3):267-71.
9. Leonhardt M, Langhans W. Fatty acid oxidation and control of food intake. *Physiol Behav* 2004;83:645-51.
10. Zhang JJ, Wu ZB, et al. L-carnitine ameliorated fasting-induced fatigue, hunger, and metabolic abnormalities in patients with metabolic syndrome: a randomized controlled study. *Nutr J* 2014 Nov 26;13:110(11 pp). doi: 10.1186/1475-2891-13-110.
11. Guo L, Milburn MV, et al. Plasma metabolomic profiles enhance precision medicine for volunteers of normal health. *Proc Natl Acad Sci USA* 2015 Aug 17 [Epub, ahead of print].
12. Huang A, Owen K. Role of supplementary L-carnitine in exercise and exercise recovery. *Med Sport Sci* 2012;59:135-42.

EAT FAT AND DITCH CARBS

Can You Transform Your Body on a Ketogenic Diet?

It seems counterintuitive: a diet loaded with butter, coconut oil and fatty cuts of red meat will help you lose that stubborn fat that's been nagging at the seams of your pencil skirt. As an added bonus, your energy levels will soar through the roof, you'll maintain better focus throughout the work day and feel fully rested at all times. It's a radical path to potentially unbelievable results.

For nearly a century, epileptic patients have used ketogenic diets to control seizures

when common medications provide no relief. In the early 1970s, Dr. Atkins brought ketogenic diets mainstream with his book, *Dr. Atkins' Diet Revolution: The High Calorie Way to Stay Thin Forever*.

Though interest quickly waned as health professionals started recommending low-fat diets (particularly low saturated fat) for heart health, four decades later, interest in ketogenic diets is once again peaking. Ketogenic diets include 80-90 percent of calories from fat, 15 percent from protein and 5 percent



from carbohydrate or roughly 3 to 4 grams of fat for every gram of protein plus carbohydrate (combined). Food choices may include heavy cream, bacon, eggs, non-starchy vegetables, mayonnaise and sausage, while fruits, starchy vegetables, breads, pasta, cereal and other carbohydrate-rich foods are not allowed.

HOW CAN A HIGH-FAT DIET MAKE YOU SLIM?

During the first several days on a ketogenic diet, your body uses its limited supply of carbohydrate stored in your liver and muscle tissue. As your carbohydrate stores dwindle, you may feel tired, get headaches and find exercise requires a lot more effort.³ Once this stash of energy is depleted, ketones, formed from the breakdown of dietary fat, become the primary source of fuel. It takes at least seven days to reach nutritional ketosis and several weeks to fully adapt to the diet. In addition to relying on fat for energy, the ketogenic diet naturally suppresses the pathways that produce and store body fat.

Ketogenic diets may also help decrease feelings of fatigue and increase mental clarity. Animal and human studies show ketogenic diets^{4,5} as well as low-carbohydrate, high-protein, high-fat diets⁶ reduce some markers of inflammation, which some theorize may help mitigate muscle soreness. However, there's not enough research on ketogenic diets and recovery from exercise or muscle soreness.

TRAINING ON A KETOGENIC DIET

Once fully adapted to a ketogenic diet, athletes can supposedly rely on a seemingly endless supply of body fat for energy. No need for carbohydrate gels, beans, gummies and sports drinks every 15-30 minutes during long runs, rides or triathlons to sustain energy levels. Fewer calories consumed may make it easier for some people to stay within their total daily calorie needs (though if you are training that much, staying within your calorie requirements shouldn't be tough).

Trading carbs for fat seems like a huge benefit for endurance athletes, particularly the ultra runner or triathlete who trains and competes for several hours at a time.⁷ However, right now this sentiment is grounded in more theory than fact. In the one true ketogenic diet study examining athletic endurance, researchers had subjects cycle at a snail's pace (equivalent to a heart rate of about 120 beats per minute for anyone 20 to 30 years old or 115 for a 40-year-old) until they became exhausted before and after four weeks on a ketogenic diet. There were no differences in the amount of

time they were able to cycle before getting tired prior to or after the four-week ketogenic diet.⁸ In studies examining high-fat diets and endurance performance, study subjects relied on more fat as opposed to carbohydrate during exercise, yet there was no clear performance advantage to the higher fat diet.⁹ If your primary goal is weight loss, it doesn't matter if you use more fat than carbohydrate while exercising as long as you're burning more total calories over the course of the day. Plus, in the interest of time, you may want to ramp up the intensity and burn as many calories in a short period of time as possible. Unfortunately, a ketogenic diet won't help you do that.

Though a person may be able to sustain very low-intensity endurance exercise while on a high-fat diet, this probably isn't the best approach for those who train at a high-intensity level or athletes who compete in high-intensity sports (basketball, tennis, football, soccer, sprinting). You won't be able to maintain high-intensity exercise for very long while on a ketogenic diet. Converting body fat into a usable form of energy is a very slow process that requires a significant amount of oxygen. Try getting through a cardio class when your body is sucking in oxygen to get your working muscles the energy they need to keep going. The higher the intensity, the faster your body needs energy.

Some researchers also question whether this diet is appropriate for those who want to gain strength and mass. According to Dr. Antonio Paoli, M.D., B.Sc., associate professor and vice dean of the School of Human Movement Sciences, University of Padova, "The ketogenic diet reduces many of the signaling molecules involved in muscle hypertrophy (growth)," making it difficult to get bigger and stronger.¹⁰ A review of 13 studies examining low-carbohydrate, high-protein, high-fat diets (containing less than 55 grams of carbohydrates per day) found the majority of the studies reported a decrease in lean body mass, while few reported no change or an increase. "However, many of these studies were designed to induce weight loss, and it is known that weight loss usually leads to the loss of lean body mass to some extent," states study author Grant Tinsley, MS, CSCS, doctoral candidate in the Department of Health,

Human Performance, and Recreation, Baylor University. Complicating matters more, low-carbohydrate diets (including ketogenic diets) lead to a substantial drop in carbohydrate content, and associated water stored with it, in muscle. This change overestimates the drop in lean body mass.^{11,12}

According to Darryn S. Willoughby, Ph.D., director, Exercise and Biochemical Nutrition Laboratory, Baylor University, "Just because carbohydrate intake is low, if protein intake is high enough and contains sufficient essential amino acids, the pathways regulating the synthesis of new protein in muscle will be up-regulated." Can you keep your protein intake low enough to stay in ketosis yet high enough to build muscle? Possibly. Dr. Paoli's team of researchers suggest more than 2.5 grams of protein per kilogram bodyweight or more than 25 to 30 percent of total daily calorie intake might suppress ketogenesis, amounts much higher than most people need to build muscle and also higher than the classic definition of a ketogenic diet.¹³ Each person's carbohydrate and protein limits needed to stay in ketosis vary and therefore, measuring ketones through blood or urine is the only definitive way to determine if you can meet your protein needs for muscle and stay in ketosis at the same time.

Three studies in athletes suggest ketogenic diets may help athletes lose or maintain weight without compromising performance. However, all three studies didn't follow a ketogenic diet protocol but instead were high-fat, high-protein, low-carbohydrate diets. All came closer to a 2:1 or 1:1 ratio of fat to protein plus carbohydrate (carbohydrate intake was kept very low, though protein intake was higher than a ketogenic diet). Also, none of the studies measured if the study subjects were actually in nutritional ketosis.^{14,15,16}

HEALTH IMPLICATIONS OF THE KETOGENIC DIET

Soon after starting a ketogenic diet, blood cholesterol levels and artery stiffness increased in epileptic children.^{17,18} High total and LDL cholesterol are considered risk factors for cardiovascular disease. Increases in artery stiffness reduce the capability of arteries to expand in response to changes in pressure. When arteries cannot open up as widely to accommodate blood flow, blood pressure increases, leading to microscopic tears on artery walls, scar tissue and the perfect surface for plaque buildup.¹⁹ Though the consequences sound dire, blood cholesterol levels returned back to normal in patients who went off the diet and in those

who stayed on it, they returned to normal after six to 12 months. Likewise, artery stiffness returned to normal after 24 months on a ketogenic diet.¹⁸ Studies in obese patients suggest ketogenic diets improve blood glucose and blood cholesterol levels over time, either due to the diet, weight loss from the diet, a combination of the two or carbohydrate restriction.^{20,21}

Ketogenic diets are typically low in calcium, vitamin D, potassium, magnesium, folic acid and fiber. There are several potential consequences associated with consistently low intake of each of these micronutrients, including softening of the bones, decreased bone density, muscle damage, muscle weakness or spasms and abnormal heart rhythm. However, with careful planning, a fiber supplement, multivitamin and under the guidance of a physician who may prescribe potassium and sodium supplements (blood sodium could drop to dangerously low levels while on this diet), nutrient needs can be met. Also, to prevent constipation when on a ketogenic diet, one should drink plenty of fluids.

FOLLOWING A KETOGENIC DIET

Ketogenic diets are safe for healthy people when overseen by a physician. Like many diets, the main issue is adherence—food choices are limited and there are no "cheat" days. You can't go on a ketogenic diet from Monday through Friday and then blow it out on the weekends or decide you absolutely must have bread on your sandwich and expect to reap the potential rewards of long-term adaptation to nutritional ketosis. "It is all or nothing ... it works, but you can't mess it up," states Dr. Paoli. Luckily, "the more you follow ketogenic diet, the easier it gets and the more benefits you derive," states D'Agostino, Ph.D. If you don't want to suffer through the first few days of fatigue and headaches, start on a lower carbohydrate diet and wait until your body adjusts prior to fully adopting a ketogenic diet.

Instead of relying on high intakes of saturated fat, make this diet healthier by adopting a Mediterranean approach and incorporating extra virgin olive oil, fatty fish and plenty of non-starchy very low-carbohydrate vegetables.

Following a ketogenic diet probably won't catapult you into an age class winner in your sport. Plus, it isn't clear how this diet will impact measures of strength and power as well as gains in muscle mass. However, it is one of many possible approaches to weight loss and may also improve your energy levels and mental clarity. ■

REFERENCES

- Freeman JM, Freeman JB, Kelly MT. The ketogenic diet: a treatment for epilepsy. 3rd ed. New York, NY: Demos Health; 2000.
- Paoli A, Bianco A, Damiani E, Bosco G. Ketogenic Diet in Neuromuscular and Neurodegenerative Diseases. *BioMed Research International* 2014; Article ID 474296, 10 pages, 2014.
- White AM, Johnston CS, Swan PD et al. Blood ketones are directly related to fatigue and perceived effort during exercise in overweight adults adhering to low-carbohydrate diets for weight loss: a pilot study. *J Am Diet Assoc* 2007;107(10):1792-6.
- Dupuis N, Curatolo N, Benoist J, Auvin S. Ketogenic diet exhibits anti-inflammatory properties. *Epilepsia* 2015; 1-4.
- Douris N, Melman T, Pecherer JM et al. Adaptive changes in amino acid metabolism permit normal longevity in mice consuming a low-carbohydrate ketogenic diet. *Biochimica et Biophysica Acta - Molecular Basis of Disease* 2015;1852(10):2058-65.
- Paoli A, Moro T, Bosco G, et al. Effects of n-3 polyunsaturated fatty acids (omega 3) supplementation on some cardiovascular disease risk factors with a ketogenic Mediterranean diet. *Mar Drugs* 2015;13:996-1009.
- Volek J, Noakes T, Phinney SD. Rethinking fat as a fuel for endurance exercise. *Eur J Sport Sci* 2014;2:1-8.
- Phinney SD, Bistrian BR, Evans WJ, Gervino E, Blackburn GL. The human metabolic response to chronic ketosis without caloric restriction: preservation of submaximal exercise capability with reduced carbohydrate oxidation. *Metabolism* 1983;32(8):769-76.
- Burke LM, Kiens B. "Fat adaptation" for athletic performance: the nail in the coffin? *J Appl Physiol* 2006;100(1):7-8.
- Tinsley GM, Willoughby DS. Fat-Free Mass Changes During Ketogenic Diets and the Potential Role of Resistance Training. *Int J Sport Nutr Exerc Metab*. 2015 Aug 12. [Epub ahead of print].
- Tinsley GM, Willoughby DS. Fat-Free Mass Changes During Ketogenic Diets and the Potential Role of Resistance Training. *Int J Sport Nutr Exerc Metab*. 2015 Aug 12. [Epub ahead of print].
- Rouillier MA, Riel D, Brazeau AS, St. Pierre DH, Karelis AD. Effect of an Acute High Carbohydrate Diet on Body Composition Using DXA in Young Men. *Ann Nutr Metab* 2015;66:233-236.
- Paoli A. The ketogenic diet and sport: a possible marriage? *Ex Sci Sports Sciences Rev* 2015;43(3):153-62.
- Zajac A, Poprecki S, Maszczyk A, Czuba M, Michalczyk M, Zydek G. The effects of a ketogenic diet on exercise metabolism and physical performance in off-road cyclists. *Nutrients* 2014;6(7):2493-508.
- Rhyu HS, Cho SY. The effect of weight loss by ketogenic diet on the body composition, performance-related physical fitness factors and cytokines of Taekwondo athletes. *J Exerc Rehabil* 2014;10(5):326-31.
- Paoli A, Grimaldi K, D'Agostino D et al. Ketogenic diet does not affect strength performance in elite artistic gymnasts. *JISSN* 2012;9:34.
- Tanakis M, Liuba P, Odermarsky M, Lundgren J, Hallböök T. Effects of ketogenic diet on vascular function. *Eur J Paediatr Neurol* 2014;18(4):489-94.
- Coppola G, Natale F, Torino A et al. The impact of the ketogenic diet on arterial morphology and endothelial function in children and young adults with epilepsy: a case-control study. *Seizure* 2014;23(4):260-5.
- Cecelia M, Chowniczky P. Role of arterial stiffness in cardiovascular disease. *JRSM Cardiovascular Disease* 2012;1(4):1-10.
- Dashti HM, Mathew TC, Hussein T, Asfar SK, Behbahani A, Al-Sayer HM, Bo-Abbas YY, Al-Zaid NS. Long-term effects of a ketogenic diet in obese patients. *Exp Clin Cardiol* 2004; 9(3): 200-205.
- Volek JS, Richard D Feinman RD. Carbohydrate restriction improves the features of Metabolic Syndrome. *Metabolic Syndrome may be defined by the response to carbohydrate restriction. Nutr Metab (Lond)* 2005;2:31.

CALCULATING NUTRITIONAL NEEDS

USING THE LOWER END OF FAT INTAKE ON A CLASSIC KETOGENIC DIET (80% OF CALORIES), A FEMALE COULD CONSUME 15 PERCENT OF CALORIES FROM PROTEIN (75 GRAMS) AND 5 PERCENT FROM CARBOHYDRATE ON A 2,000-CALORIE DIET. PROTEIN REQUIREMENTS ARE 1.2 - 1.8 GRAMS OF PROTEIN PER KILOGRAM BODYWEIGHT (OR 0.55 - 0.82 GRAMS PER POUND OF BODYWEIGHT) PER DAY IF TRAINING AND EATING A DIET WITH ENOUGH CALORIES TO MAINTAIN WEIGHT. PROTEIN NEEDS GO UP IF YOU ARE CUTTING CALORIES TO SPARE THE BREAKDOWN OF MUSCLE TISSUE WHEN DIETING. ON THIS DIET, 75 GRAMS OF PROTEIN EQUALS JUST LESS THAN 1.3 GRAMS OF PROTEIN PER KILOGRAM BODYWEIGHT FOR A 130-POUND FEMALE.

The MIRACLE POWERS of Coffee

Drinking several cups of coffee a day will leave you dehydrated, geeked out on caffeine and stain your teeth to a light brownish-yellow color over time— for several decades, consumers have been warned about the detrimental effects associated with regular coffee intake. These dire warnings, largely based on assumptions rather than actual science, fell on deaf ears as long lines spill out the door in coffee shops throughout the nation. Emerging science supports and may even encourage regular coffee consumption, as intake is tied to a decreased risk of certain diseases and increase in lifespan.

Coffee beans are actually seeds from coffee cherries. They are picked, dried and roasted, turning them from green to those familiar aromatic brown coffee beans we know and love. It's ironic that a beverage made from seeds has gotten such a bad rap. Green coffee beans are naturally rich in antioxidants including chlorogenic acids, compounds that are readily absorbed in the human body, have antibacterial and anti-inflammatory actions and are associated with many health benefits, including a reduction in cardiovascular disease, type II diabetes and Alzheimer's disease. Antioxidants protect plants from disease and pests and protect human cells from harm.

However, many people assumed antioxidants were destroyed during the roasting process, leaving little nutrition brewed into your mug. Plus, excess caffeine, the most widely consumed substance that affects brain functioning in the world, has long been associated with the jitters: spontaneous abortion, low birth weight and premature birth in pregnant females; high blood pressure and abnormal heart rhythms. However, roasted coffee beans are actually loaded with antioxidants and scientists are slowly



uncovering the metabolic fate of each type of antioxidant, as well as the potential health benefits associated with regular coffee intake.

HEALTH BENEFITS

A National Institutes of Health study published in 2012 found older adults who drank caffeinated or decaffeinated coffee were less likely to die from heart disease, respiratory disease, stroke, injuries and accidents, diabetes and infections. Those who drank more than three cups per day had a 10 percent lower risk of death compared to those who did not drink coffee. Though this study only showed an association between coffee consumption and a decreased risk of death, and it isn't clear why coffee drinkers benefited from a longer life, it provided some reassurance to people who couldn't seem to give up their favorite beverage. Studies published over the past three years lend strength to the relationship between regular coffee intake and a decreased risk of certain diseases.

Cardiovascular disease is the leading cause of death in the world. There are many factors that contribute to the development of diseases of the heart and blood vessels including atherosclerosis— blood vessels that

contain a buildup of plaque on artery walls, narrowing the area blood can pass through and increasing risk of blood clots that can lodge in these narrow spaces, causing a heart attack or stroke. Poor diet, smoking, obesity, a sedentary lifestyle and other factors contribute to clogged arteries.

According to media reports highlighting a study published in the British Medical Journal's publication *Heart*, consuming three to five cups of coffee a day may keep arteries clear by helping prevent the buildup of plaque. This study examined diet and artery health in more than 25,000 Korean men and women. They found people who drank three to five cups of coffee per day were 19 percent less likely to have the first signs of atherosclerosis, the buildup of calcium deposits in arteries, compared to those who were not coffee drinkers. Lower intakes of coffee were not associated with a reduction in calcium buildup. Though this study lends more support for the potential health benefits of coffee, diet was examined at one point in time and study subjects were asked to recall their coffee intake over the previous year. Therefore, they showed an association between coffee intake and artery health, but this doesn't prove that

STUDIES PUBLISHED OVER THE PAST THREE YEARS LEND STRENGTH TO THE RELATIONSHIP BETWEEN REGULAR COFFEE INTAKE AND A DECREASED RISK OF CERTAIN DISEASES.

coffee reduces the buildup of plaque on artery walls or that it can prevent cardiovascular disease. More research is needed to understand how coffee intake could support heart health.

Recent research also suggests coffee may be protective against cancer. Regular consumption of caffeinated coffee was associated with a decrease in recurrence of colon cancer with the strongest results observed in those who drank at least four cups of coffee per day, providing about 460 milligrams of caffeine. Individuals previously treated for stage III colon cancer who were regular coffee drinkers, consuming at least four cups of caffeinated coffee per day, had a 42 percent lower risk of recurrence of colon cancer and 33 percent lower risk of dying from the disease. The potential link between caffeinated coffee intake and recurrence of colon cancer may lie in the ability of caffeine to lower insulin levels.

Insulin is a hormone needed for the metabolism of carbohydrate, protein and fat, yet excess insulin production is associated with an increased risk of cancer. Like the study on calcium buildup in arteries, these results should also be interpreted carefully and again, it is important to note this is only an association— they monitored people's diets to help identify factors that influenced colon cancer recurrence. Only a clinical trial can show cause and effect—that coffee intake leads to different outcomes compared to not drinking coffee. At this time it's too soon to jump to the conclusion that caffeinated coffee decreases risk of colon cancer recurrence and death from this disease.

If regular coffee consumption is associated with prevention of colon cancer reoccurrence in people who have been treated for this disease, why didn't it prevent the cancer to

begin with? They didn't examine coffee consumption before diagnosis of colon cancer but instead started examining the relationship between coffee and cancer recurrence after initial diagnosis of the disease. Research on coffee intake and risk of various cancers is mixed with some showing coffee is protective and others suggesting it may contribute to an increase in risk. There are many potential factors that impact cancer risk and risk of cancer recurrence with a sedentary lifestyle, high body fat and alcohol intake strongly associated with increased risk in certain types of cancer. Conversely, studies suggest fruit and vegetable intake is associated with a decrease in risk of some types of cancers. As for coffee, time and more research will tell if one of America's favorite beverages fits in the picture.

SHOULD YOU REACH FOR MORE COFFEE?

All of these studies on regular coffee consumption include higher intakes of coffee. No benefits are noted for lower intakes— one to two cups per day. Keep in mind that some people should avoid or be cautious with caffeine intake, including kids, teens, people with anxiety disorders, glaucoma, heartburn and/or cardiovascular disease. Also, pregnant women should avoid higher intakes of caffeine— more than three cups of coffee per day (regular sizes cups).

If you drink coffee in moderation, enjoy it! Don't increase your intake based on these studies or start drinking if you aren't a regular coffee consumer. Though promising, these studies only showed associations. Future research will tell us more about the many naturally occurring compounds in coffee, their actions in the body and the potential link between coffee and a decreased risk of disease. ■

REFERENCES

- Choi Y, Chang Y, Ryu S, Cho J, Rampal S et al. Coffee consumption and coronary artery calcium in young and middle-aged asymptomatic adults. *Heart* 101:1136-1140 (2014):306663
- Freedman ND, Park Y, Abnet CC et al. Association of Coffee Drinking with Total and Cause-Specific Mortality. *New Eng J Med* 2012;366:1891-1904.
- Farah A, Montenegro M, Donangelo CM, Lafay S. Chlorogenic acids from green coffee extract are highly bioavailable in humans. *J Nutr* 2008;138(12):2309-15.
- Ranheim T, Halvorsen B. Coffee consumption and human health: beneficial or detrimental? Mechanisms for effects of coffee consumption on different risk factors for cardiovascular disease and type 2 diabetes mellitus. *Mol Nutr Food Res* 2005;49:274-84.
- Almeida AA, Farah A, Silva DAM, Nunam EA, Glória MBA. Antibacterial activity of coffee extracts and selected coffee chemical compounds against enterobacteria. *J Agric Food Chem* 2006;54:8738-43.
- Lindsay J, Laurin D, Verreault R, Hébert R, Hellmuth B, Hill GB, McDowell I. Risk factors for Alzheimer's disease: a prospective analysis from the Canadian Study of Health and Aging. *Am J Epidemiol* 2002;156:445-53.
- Santos MD, Almeida MC, Lopes NP, Souza GEP. Evaluation of the antiinflammatory, analgesic and antipyretic activity of the natural polyphenol chlorogenic acid. *Biol Pharm Bull* 2006;29:2236-4.
- Barna B, Fodor J, Pogány M, Király Z. Role of reactive oxygen species and antioxidants in plant disease resistance. *Pest Manag Sci* 2003;59(4):459-64.
- Guercio BJ, Sato K, Niedzwiecki D et al. Coffee Intake, Recurrence, and Mortality in Stage III Colon Cancer: Results From CALGB 89803 (Alliance). *J Clin Oncol* 2015 Aug 17. [Epub ahead of print]

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HIT THE SHEETS FOR A LEAN PHYSIQUE

JUST ONE MORE REASON TO GET YOUR ZZZs

"Make sure you're getting enough rest," is one of those statements we've all heard (and ignored) hundreds of times. We all *know* that rest is critical to our health, but it's easily blown off in our quest to squeeze more into our already packed schedules. If you're anything like me, you may even occasionally trade sleep for training. *If you want results, gotta get it in no matter what, right?* Wrong.

Less Sleep, Less Results

According to recent research, those who get insufficient sleep experience less results from their diet and exercise efforts.

Analyzing the sleep habits of 1,088 pairs of twins, researchers found that when individuals don't sleep enough (less than seven hours), their efforts (nutrition, exercise, etc.) do not affect their BMI as much as their genetic predispositions do. In other words, if your genetics are such that you have the tendency to hold fat, your efforts to achieve a lean physique will be less fruitful when you are sleep deprived. Conversely, getting sufficient sleep allows diet and exercise to have a more substantial impact.

In another study, sleep-restricted individuals (four hours in bed for five consecutive nights) gained more weight than a control group (10 hours in bed a night). The sleep-deprived consumed more calories daily, especially during the late night hours. In addition, the late night hour calories tended to be higher in fat.

Get To Sleep

To maximize your fitness regimen, make seven or more hours of sleep a daily priority by jumping in the sack a little earlier. Have trouble falling asleep? Try these tips to help you wind down:

BANISH BLUE. While any light at night can disrupt the sleep cycle by suppressing our bodies' natural secretion of melatonin, blue light (present in electronics with screens as well as energy-efficient lighting) has the most negative effect. Avoid bright screens two to three hours before bed. And, try using the F.lux app (Twilight for Android) to reduce the blue light coming from your device screens at night.

BRIGHTEN YOUR DAY. Get out in the sun or expose yourself to any bright light early in the day to help set your internal biological clock. This helps your body know it's time to be awake and will be set to wind down for rest 14-16 hours later.



THINK LESS. End the night with activities that involve less mental activity: yoga, listening to calm music, cooking, etc.

CUT OFF WORK. If your work causes you stress, it's best to avoid it close to bedtime, as it increases cortisol, which makes falling asleep a challenge.

COOL IT. Turn up the fan, turn down the air and strip down a bit, as sleepiness increases as core body temperature decreases.

CARB IT UP. If your diet allows, having a small serving of fast-digesting carbs about four hours before bedtime can help bring on sleep.

EXERCISE INTENSELY. Get regular intense exercise, but do so a number of hours prior to bedtime.

BRAIN DUMP. Racing thoughts or things-to-do keeping you from sleep? Take 15 minutes a few hours before bed to write out your concerns and list out your tasks for the next day. Also, keep a pad of paper and pen by the bed to capture any thoughts that come up while you are in bed. Do not pick up your phone to type yourself a note— the bright light may further disrupt sleep.

An Added Bonus!

Besides feeling better and making more progress toward your goals, sleeping more will help you become a morning person. Once you have established a good sleeping routine, you can go from dragging through to dominating your morning. You will feel more alert and productive, and you might even find more time and energy for your fitness goals!

REFERENCES

Watson NF, Harden KP, Buchwald D, Vitiello MV, Pack AI, Weigle DS, Goldberg J. Sleep duration and body mass index in twins: a gene-environment interaction. *SLEEP* 2012;35(5):597-603.
 Spaeth A, M., Dinges D, F., & Goel N. (2013). Effects of Experimental Sleep Restriction on Weight Gain, Caloric Intake, and Meal Timing in Healthy Adults. *Sleep*, 36(7), 981-990. <http://doi.org/10.5665/sleep.2792>
 Gardner, A. Sleep Curbs Influence Of Obesity Genes. CNN Online, Published May 1, 2012. <http://www.cnn.com/2012/05/01/health/sleep-curbs-obesity-genes/index.html>
 Andrew, B. Prepping For Bed. *Psychology Today Online*, Published July 16, 2008. <http://www.psychologytoday.com/articles/200807/prepping-bed>

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